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Gerard P. Hodgkinson
and
J. Kevin Ford

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EDITORIAL FOREWORD

This is the 20th volume of the *International Review of Industrial and Organizational Psychology*. In keeping with previous volumes in the series we have commissioned chapters on a range of topics at the cutting edge of the industrial, work, and organizational psychology field, from some of the world's leading researchers. A number of central topics covered in the present volume (e.g., burnout, the psychology of mergers and acquisitions, and emotions in the workplace) have been surveyed in earlier volumes in the series, but such is the scale of developments currently taking place in these areas that we considered it timely that these topics should be revisited. Topics new to the series in the present volume include a thought-provoking chapter on the contribution of I/O psychology to aviation safety, an issue of considerable and growing importance at the present time.

There is no question that during its first two decades the *International Review of Industrial and Organizational Psychology* has become firmly established as 'the most prestigious series of annual volumes in the field of Industrial and Organizational Psychology', the ultimate ambition of the series' Founding Editors, Cary L. Cooper and Ivan T. Robertson. Under their careful stewardship, from its inception the series has attracted a great many thoughtful, state-of-the art reviews, spanning the entire field, from personnel selection and assessment to work motivation and job design, training and development, organizational development and change to cognitive processes in organizations, stress and well-being, careers and career development, workplace bullying, the prevention of violence at work, and advances in research methods.

We were both highly delighted when we received our respective invitations to assume the editorship of this series. Under our editorship the *International Review of Industrial and Organizational Psychology* will continue to commission authoritative and scholarly reviews that comprehensively survey developments across the entire range of topics that comprise the field of industrial, work, and organizational psychology. Continuing the ethos of the series' Founding Editors, our aim is to publish chapters that will appeal to academic researchers, educators, and practising applied psychologists and other professionals seeking to gain insights into the behaviour of individuals and groups and up-to-the-minute assessments of the underlying evidence base for psychological tools, techniques, and processes that purport to enhance human effectiveness and well-being in workplace settings. Future volumes will include surveys of developments in organizational learning, task analysis, socialization in organizational contexts, the costing of human

resources coping with workplace stress, qualitative research methods, attribution theory and international management, among other topics, with contributions from around the globe.

GPH
JKF
November 2004

Chapter 1

MERGERS AND ACQUISITIONS: AN UPDATE AND APPRAISAL

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INTRODUCTION

The underperformance of Mergers & Acquisitions (M&As) has been a significant cause for concern since the 1960s (Kitching, 1967) and has provoked continuing research attention. In an earlier volume of this publication, Hogan and Overmeyer-Day (1994) presented a comprehensive review of the current literature relating to the psychology of M&As. The literature they cited was drawn predominantly from US sources and reflected the concentration of interest and activity in this field at that time. In this review the literature was usefully conceptualized as falling into four main research categories which in broad terms considered inputs, process, impact on employees, and performance outcomes:

(i) Studies which examine the pre-merger or exogenous variables such as: objectives, relative size, parent characteristics (e.g., past experience), culture, and target characteristics (e.g., prior performance and organizational or cultural fit).
(ii) Studies which focus on the integration or acculturation process and/or consider variables such as identity, communication, speed of change, control mechanisms, and human resource interventions.
(iii) Studies which assess emotional and behavioral outcomes such as stress-related variables, affective variables (e.g., commitment and staff turnover), and absenteeism.
(iv) Studies which attempt to measure ultimate performance outcomes using objective measures like stock price or subjective measures like managerial assessment.

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Given the economic and human importance of M&As, the contribution of psychology to the understanding of the M&A phenomenon and process outlined in the 1994 review was disappointing. In terms of literature coverage and the number of empirical research studies reported, it was apparent that the psychological aspects of M&A had received disproportionately less attention than the financial and strategic issues. Inputs and outcomes, it seemed, were more important than the integration process itself and the emotional and behavioral responses of employees. This lack of advancement reflected similar comments made earlier (Humpal, 1971), and more contemporary reviews lamenting the fragmented nature and paucity of research in this field (Cartwright & Cooper, 1990; Hunt, 1988).

The 1994 review was also highly critical of the quality of the existent studies relating to psychological issues which were variously described as being retrospective, anecdotal, speculative, and atheoretical. Furthermore, Hogan and Overmeyer-Day (1994) concluded that most studies lacked generalizability, as they were based on small sample sizes or the single case study method.

The purpose of this current chapter is to outline the main developments which have occurred in the M&A literature in the intervening period, particularly the contribution made by psychologists. In the last 10 years, the M&A literature has grown significantly as the level of activity has remained high worldwide. During that time, human and psychological factors have increased in prominence, yet it still remains a literature dominated by financial and market strategists (Sudarsanam, 2003). In the course of conducting this review an online library search of all the major management and psychology databases found that only about 5% of the abstracts retrieved, using M&A as the key words, could be considered to be related to the psychological aspects of M&As. On closer scrutiny, even fewer related to empirical studies and could be classified as pragmatic science as defined by Hodgkinson, Herriott, and Anderson (2001) and so could be regarded as making a contribution to evidence-informed management knowledge (Tranfield, Denyer, & Smart, 2003). The literature included has been chosen because it is widely cited, and hence perceived to be influential, and/or because it presents new perspectives and methodologies and draws upon empirical data. The material reviewed will be presented and organized around similar headings to those used in Hogan and Overmeyer-Day (1994). First, however, it is appropriate to briefly discuss the background and current context.

Current Developments in M&A Activity

There have been successive waves of M&A activity which can be traced back as far as the late 18th century (Buckley & Ghauri, 2003). In 1997, M&A activity entered its fifth and latest wave. At its height, in 2000, the dollar

value of completed mergers, acquisitions and divestitures was in excess of US$1.7 trillion which represented an increase of 25% on the previous year (Cartwright & Price, 2003). A significant contributor to this increase has been an escalation in the frequency and value of international M&As, which account for approaching half of all deals worldwide. The countries regarded as most active in Europe are the UK, Germany, France, and the Netherlands (Sudarsanam, 2003).

While the USA continues to be a major acquirer of foreign companies, the value of these deals during the period 1991–2000 was notably less than the level of investment flowing into the US in terms of foreign acquisitions of US companies. In 2000 alone, over 1,000 American companies were acquired by overseas buyers at a value of US$340bn. In contrast, in the 10-year period between 1978–1988, a little over 200 US organizations were bought by foreign acquirers each year. The UK has also seen an increase in foreign direct investment, mainly from the USA, Japan, Germany, and France (Child, Faulkner, & Pitkethly, 2000) and in 1996 foreign acquisitions of UK companies exceeded the combined total value of all other EU countries (KPMG, 1997). In a recent survey of US and European senior managers working for organizations employing in excess of 1,000 employees (Cartwright & Price, 2003), it was found that over half had been involved in a merger during the previous 5 years and one in three had experienced an acquisition.

Since its beginning (Kitching, 1967; Meeks, 1977), the M&A literature has sought to explain why so many M&As tend to destroy rather than enhance firm value. Over time, estimates of M&A failure have been produced, ranging from 80% (KPMG, 2000; Marks, 1998) to 50% (Buono, Bowditch, & Lewis, 2002; Cartwright & Cooper, 1997; Hunt, 1988; Weber, 1996), which have served to reinforce earlier observations made that acquisition strategy is:

> 'an area of corporate strategy where inappropriate mathematical theory and a yearning for greener grass has prevailed over commonsense'.
>
> (British Institute of Management, 1986, p. 3)

While some sectors, such as banking and insurance, tend to achieve higher success rates than others in terms of enhanced shareholder value (*Financial Times*, August 2000), irrespective of the sector, it is the 'mega-mergers' between large, comparable-sized organizations which fail more frequently. Coopers & Lybrand (1992) carried out a study of 50 large UK acquisitions with a minimum value of £100mn during the late 1980s/early 1990s. Based on interviews with senior executives they found that 54% were regarded as failures. The most common reasons for failure were cited as being target

management attitudes, cultural differences, and lack of post-acquisition integration planning. More recent reports (Booz, Allen, & Hamilton, 2001; Henry, 2002) suggest that between 60 and 70% of mega-mergers fail to improve shareholder wealth and more than half actually reduce it (KPMG, 2000). It is worth noting that such reports have mainly been produced by accounting and consultancy firms that offer advisory services to businesses involved in M&As.

In a relatively small-scale study of acquisition performance Hunt (1988) also highlighted a concerning issue that experienced acquirers performed no better than those organizations acquiring for the first time. This would suggest that there is little transference of management learning or that the strategy and process of integration is contingent upon the circumstances and so varies from one acquisition to another. However, more recent studies (Haleblian & Finkelstein, 1999; Schoenberg, 2003) have found evidence that previous experience is associated with superior performance and that, in part, it is the result of a greater level of resource-sharing and the centralization of functions.

Within the psychological literature, it has been consistently argued that human factors are the key to M&A success or failure (Cartwright & Cooper, 1997; Terry, 2003) and that insufficient attention has been paid to the way in which M&As are planned and implemented, a view which is also increasingly shared by M&A managers (Coopers & Lybrand, 1992). However, because so much of M&A success, in terms of share performance, is dependent upon market confidence, organizational leaders may be prone to exaggerate the potential gains and benefits of M&A activity in their statements to the business press and so create unrealistic expectations as to what the deal will deliver. More attention to human factors is likely to improve the likelihood of M&A success, but it seems inevitable that a gap between expectation and reality will continue to exist.

Research Context

M&As are recognized to be difficult settings in which to conduct psychological research. Access to commercial organizations at such a sensitive time is problematic. Establishing the attitudes, behaviors, emotions and psychological states of employees prior to the event are particularly difficult because of the secrecy which surrounds M&A negotiations. Once rumours of an impending M&A start to circulate, organizational stability is disturbed and employees have already effectively become engaged in a change process. Therefore, even at this early stage, any data collected related to their current attitudes and behaviors will have already been shaped by the rumored event. Consequently, studies which have attempted to compare data pre and post merger have done so using retrospective reconstruction methods by

questioning employees as to how they felt or thought during a period of time prior to the event, despite the inherent weaknesses of such an approach (Cartwright & Cooper, 1997). More fortunate researchers have been able to draw upon data from pre-existing employee attitude surveys or personnel records (Schweiger & De Nisi, 1991).

In the past, other researchers have chosen to avoid the problems associated with M&As in the private sector and focused on quasi-mergers involving combinations in the public and voluntary sectors which are generally more accessible (Blumberg & Weiner, 1971; Dackert, Jackson, Brenner, & Johansson, 2003; Humpal, 1971; Shirley, 1973; Wicker & Kauma, 1974). Others (Berney, 1986; Rentsch & Schneider, 1991) have abandoned field investigations altogether and conducted laboratory-based experiments using hypothetical M&A scenarios, usually involving student samples. Although such methods have the advantage of providing a more controlled environment in which to isolate, manipulate, and investigate variables, they fail to capture the complexity and dynamic nature of real-life M&A situations. Because mergers, as well as acquisitions, are rarely a marriage of equals (Humpal, 1971), power dynamics play a major role in determining who are the 'winners and losers' in terms of merger outcomes. Consequently, the validity of M&A data can be weakened by response bias and unrepresentative sampling. Furthermore, the emotional and behavioral responses are liable to temporal fluctuation at different stages in the merger process (Cartwright & Cooper, 1997).

However, there have been some encouraging developments in more recent studies which have become more theory-driven than in the past. Although it is still the case that the majority of recently published empirical studies are cross-sectional rather than longitudinal in design, a greater emphasis has been placed on systematic theory-building and testing (Ashkanasy, 1985; Krug, 2002). The case study method has continued to be a popular methodological approach (Empson, 2001; Meyer, 2001), but there are now some studies which use multiple cases rather than rely on a single case study (Larsson & Lubatkin, 2001; Larsson & Risberg, 1998). Perhaps the most notable change in the M&A literature is the growth in research which has emanated from outside the US, particularly the degree of attention which the topic is now receiving in Europe. Domestic M&A activity is complex; the increase in cross-border M&As has added an additional layer of complexity to this intriguing phenomenon. Ten years ago, the compatibility of M&A partners was debated and considered almost entirely within the context of similarities and differences in organizational cultures; the focus of this debate has since been extended to consider the role of national culture differences. While the themes within the literature have changed little from the categories identified by Hogan and Overmeyer-Day (1994), some have grown and developed more than others and will now be considered in detail.

(i) PRE-MERGER OR EXOGENOUS VARIABLES

Motives

The motives for M&A are many and various and are closely linked to prevailing economic, social, regulatory, and market conditions (Cartwright & Cooper, 1990). A distinction is usually drawn between managerial or non-value-maximizing motives and financial or value-maximizing motives (Napier, 1989). Managerial or non-value-maximizing motives refer to M&As which are aimed at increasing market share, managerial prestige and market confidence, whereas financial or value-maximizing motives are concerned with achieving financial synergies. Whilst the motives for M&A remain unchanged, the continuing expansion of the membership of the EU and the growth of new market economies like China over the last 10 years has provided new geographical opportunities for organizations to grow through merger and acquisition (Buckley & Ghauri, 2003).

Comparatively less attention has been paid to the potential psychological and less overt motives for M&As (Hunt, 1988; Levinson, 1970; McManus & Hergert, 1988; Rhoades, 1983), whereby CEOs and senior managers engage in the activity out of personal fear of obsolescence as a means to increase their power, enhance their career prospects, or create excitement (Donaldson & Preston, 1995). As Fitzroy, Acs, and Gerlowski (1998) observe, executive remuneration and compensation are both closely related to organizational size and the financial enticements offered to senior executives to remain or to leave merged or acquired companies can be substantial (Cartwright & Cooper, 2000).

Understandably, the covert nature of psychological motives which organizational leaders may have in initiating a merger or acquisition is not an area which easily lends itself to empirical research. However, there is some limited evidence to suggest that the collective decisions reached by senior management teams are affected by the composition of the group and the extent to which they share similar beliefs when evaluating potential M&A targets. Corner (2003) has studied collective cognition, in terms of the extensiveness and homogeneity of beliefs toward acquisition among top management teams in New Zealand. Based on a sample of 60 top management teams responsible for recent acquisitions, she found that belief extensiveness, defined as 'the richness or number of different acquisition beliefs', possessed by top management teams had a positive and significant relationship with financial performance, whereas belief homogeneity was negatively correlated with acquisition performance. The findings support the view of Hitt, Harrison, Ireland, and Best (1998) that the cognitive limitations of top management teams affect the financial success of an acquisition and can lead to inadequate target evaluation as a result of group think (Janis, 1982). Therefore, strong leaders who discourage challenge and belief diversity within their senior management teams may be more able to influence M&A decisions that benefit their own personal interests rather than those of shareholders.

Parent and Target Characteristics

Size

The different types and forms that M&As can take are generally classified according to the extent to which the activities of the acquired organization or smaller merger partner are related to those of the acquirer or dominant partner and the envisaged degree of integration necessary to achieve M&A objectives (Haspeslagh & Jamieson, 1991; Schweiger, Csiszar, & Napier, 1994). It has been argued that the lack of generalizability of much of the earlier research into M&A performance stems from the failure to adequately consider pre-existing organizational characteristics such as relative size, strategic fit, culture, and managerial style in relation to objectives and integration strategies (Jemison & Sitkin, 1986; Schraeder & Self, 2003; Sudarsanam, 2003).

Early research (Wicker & Kauma, 1994) demonstrated that levels of organizational commitment decreased post acquisition among employees of the smaller acquired organization. However, the suggestion that employees become less committed simply because the organization has become larger has been challenged by more recent studies. Cartwright and Cooper (1993a) found no significant differences in organizational commitment and job satisfaction among a sample of financial services sector managers drawn from both merger partners, despite substantial differences in relative organizational size. They attributed these findings to the similarities in the pre-existing cultures of the merging organizations. Although the larger organization was perceived to be dominant and the more influential partner, the post-merger culture and working practices were not perceived to be significantly different from those which existed pre merger, as demonstrated by the results of a post-merger questionnaire survey. A follow-up investigation found that over time it was the senior managers from the smaller merger partner that assumed the majority of the top management positions in the merged organization (Cartwright & Cooper, 1997).

Although many writers (Marks & Mirvis, 1992, 1997; Morrison & Robinson, 1997) have emphasized that M&As result in negative attitudes and emotions among employees of the acquired company or smaller merger partner, there are examples of the reverse situation, where acquired employees have perceived the event more positively than members of the acquiring organization (Buono, Bowditch, & Lewis, 1985; Panchal & Cartwright, 2001). Evidence from studies conducted by Matteson and Ivancevich (1990) and Pritchett (1985) emphasize that employee perceptions and attitudes toward M&A are linked to their individual appraisal of the likely impact the event will have on their own career, irrespective of any organizational benefits or potential changes in working practices. Matteson and Ivancevich (1990) found that employees of acquiring companies who were at the mid-career stage were more likely to express negative attitudes

toward acquisition because they perceived that their chances of career progression would become more restricted as a result of increased organizational size. The data they collected were based on interviews conducted early in the M&A process, when fears concerning job future are likely to be highest. Once job loss concerns subside, any changes in culture and job practices may have become more salient. Overall, it would seem that the issue of increased organizational size can be experienced both positively and negatively by different employee groups, irrespective of whether they are members of the acquired or the acquiring organization.

However, the issue of size does play a role in shaping employee perceptions concerning partner domination and their expectations of how the merger will affect them. Dackert et al. (2003) investigated the expectations of employees involved in a Swedish hospital merger. They found that employees of the smaller hospital expected the other larger hospital to be dominant and that its practices would be adopted post merger. Consequently, they anticipated more organizational change and experienced a greater threat to their continued social identity than employees of the larger hospital. The strength of this study is that it was conducted some months prior to the merger rather than retrospectively, as is more often the case (Isabella, 1990). The study achieved a good response rate, approaching 60%; however, it was restricted to head office staff ($n = 114$) across the two organizations and so would be expected to be close to the corporate decision-makers. Perceptions of partner dominance may be less consistent and more ambiguous at different employee levels, and in the case of global M&As might vary between operating countries.

Relative size also has implications for post-acquisition acculturation and the relative standing of acquired executives which will be discussed in more detail later in this chapter (p. 25).

Strategic Fit

A number of studies have examined over time the relationship between financial performance and the strategic fit of the combining organizations (Chatterjee, 1992; Lubatkin, 1987; Schoenberg, 2003; Singh & Montgomery, 1987). Such studies have failed to find a consistent relationship and have inadequately explained the large variance among M&As where the strategic fit was considered to be good, in terms of providing opportunities for revenue enhancement, cost savings, or new growth. Strategists suggest that related M&As between companies in the same industry or business sector are likely to outperform unrelated M&As, because they provide greater opportunities for value enhancement. However, this has not been found to be the case where there has been a lack of organizational or culture fit. This was illustrated in the case of the recent merger between the German car manufacturer Daimler and the American Chrysler Corporation, which has received

extensive press coverage. When the merger was announced it was described as the 'perfect' strategic fit, as the respective markets hardly overlapped and it provided the opportunity to capitalize on the complementary strengths of the enterprise of the US organization with the technical expertise of the German company (Schoenberg, 2000). As it turned out, in little over 12 months the combined value of Daimler–Chrysler was significantly less than the pre-merger value of either partner and there were rumors of major cultural conflicts between the two management groups and significant integration problems.

Cartwright and McCarthy (2005), Jemison and Sitkin (1986), Marks and Mirvis (2001), and Schoenberg (2003), among others, have argued that better M&A outcomes could be achieved if decision-makers paid more attention to wider organizational and behavioral factors, which affect integration success, together with a greater involvement of the Human Resources (HR) function from the outset (see also Cartwright & Cooper, 2000). This view was supported by a survey of chief executives of Fortune 500 companies (Schweiger & Goulet, 2000) which found the ability or competence to manage human integration was rated a more important factor in M&A success than financial or strategic factors, including the price paid. Although several researchers (Cartwright & Cooper, 2000; Cartwright & McCarthy, 2005; Sudarsanam, 2003) have argued for the benefits of cultural profiling as a first step toward aligning culture to strategy, in practice this rarely occurs. Hunt, Lees, Grumbar, & Vivian (1987) have also highlighted the limited nature of the due diligence audit, which is normally restricted to an assessment of the financial and legal health of a target. Significantly, in 88% of the cases they studied the implementation team was significantly different in composition from the negotiating team.

Culture Fit

Researchers who have emphasized the importance of culture fit to M&A performance differentiate between the recognition of potential synergies as being related to the goodness of the strategic fit and the actual release or realization of those synergies as being related to the goodness of the cultural fit (Cartwright & Cooper, 1997; Jemison & Sitkin, 1986; Weber, 1996). The concept of culture has been widely researched (see, e.g., Cooper, Cartwright, & Early, 2001; Walter, 1985), particularly in relation to organizational performance and employee outcomes (Denison & Mishra, 1995). Culture is considered to be underpinned by (often unconscious) assumptions, values, and beliefs which are manifested in observable symbols, rituals, and normative patterns of behavior, which influence the way in which an organization thinks and goes about its business (Cooper et al., 2001). Furthermore, because it provides stability, order, and a sense of cohesion among

organizational members, culture is problematic for M&As, in that established cultures are difficult to change or displace and lead to the development of a 'them' and 'us' mentality (Marks & Mirvis, 2001). According to Daly, Pounder, and Kabanoff (2004) most of the research into the role of culture in M&As has focused on three inter-related dimensions: degree of cultural compatibility (Cartwright & Cooper, 1993a; Datta, 1991; Sales & Mirvis, 1984), organizational resistance (Schweiger & De Nisi, 1991), and acculturation processes (Elsass & Veiga, 1994; Nahavandi & Malekzadeh, 1988).

However, few studies have directly examined the relationship between culture fit and financial performance. One such study (Chatterjee, Lubatkin, Schweiger, & Weber, 1992), based on a sample of 30 US acquisitions, investigated the extent to which share prices and their projected future earnings were influenced by the extent to which the senior managers involved considered the two organizations to be culturally different. The study demonstrated that share market expectations and behavior were more positive in relation to M&As where there was perceived to be cultural similarity. Cartwright and Cooper (1997) related the degree of culture fit to managerial assessments of M&A success and concluded that, although similarity was advantageous, different cultural combinations could also work well.

Cartwright and McCarthy (2004) have proposed that areas of potential cultural difference, as a pre-merger or exogenous variable, should be investigated as part of the due diligence process. Schoenberg (2003) also suggests that the assessment of management styles should form an important part of the pre-bid evaluation as it has implications for resource-sharing. Whilst various measures of culture exist (Sparrow, 2001), with the exception of a measure devised by Forstmann (1997) to investigate the performance of a sample of pharmaceutical acquisitions, there are no instruments which have been specifically designed to assess cultural compatibility in the context of M&As. Sparrow (2001) has argued that the design and use of culture diagnostics generally have limited value for informing HRM practices, without more specific and robust research which directly links individual dimensions or cultural elements to performance outcomes. Cartwright and McCarthy (2004) acknowledge that the same issue applies to any cultural profiling techniques developed for M&A situations. As will be discussed later (p. 12), there is growing evidence that the most salient cultural dimension in terms of organizational and employee outcomes concerns the degree of autonomy allowed to organizational members as being an important cultural dimension (Cartwright & Cooper, 1997; Larsson & Lubatkin, 2001).

National Cultural Differences

As M&A activity has become more international, research attention has increasingly focused on the impact of national cultural differences on

M&A activity. Nahavandi and Malekzadeh (1988) suggest that international M&As present a double acculturation problem in that national cultural differences add an additional layer of complexity over and above organizational culture. In a study of employee stress and attitudes toward mergers, Weber, Shenkar, and Raveh (1996) found that national culture differences were more strongly associated with negative attitudes and stress than differences in organizational culture. Larsson and Risberg (1998) suggested that an analysis of the pattern of European cross-border mergers and acquisitions shows that acquirers are attracted to foreign targets which are geographically close to their own country and/or perceived to be relatively similar in terms of their cultural attitudes and business practices. Hence, within Europe, organizations tend to invest in neighboring countries or those with which they have the closest economic, linguistic and cultural ties. The case of the Nordea banking merger which has been the focus of extensive European research (Soderberg & Vaara, 2003) and involved the merger of four different Nordic institutions is a recent example of this.

Two surveys of managerial attitudes toward foreign M&As have been conducted to investigate the extent to which national culture may play a role in M&A selection decisions (Cartwright, Cooper, & Jordan, 1995; Cartwright & Price, 2003) and have provided support for the notion that cultural similarity promotes M&A activity. The surveys questioned a sample of international managers as to their preferences toward entering a merger or making an acquisition involving a foreign-owned organization and required them to rank-order these preferences by country. Although conducted 8 years apart, the results of both surveys were similar in that, given a choice, managers would prefer to combine with an organization from a national culture which they perceived to be approximately similar to their own and were highly avoidant of cultures which they perceived to be significantly different and lacking a shared understanding. The surveys found that managers from the highly individualistic cultures, as identified by Hofstede (1980), such as the US, the UK, and the Netherlands, clearly preferred to merge or be acquired by organizations emanating from other individualistic cultures and would least prefer to engage in M&A activity with collectivist cultures such as Italy, Spain, and Japan. According to Cooper and Kirkcaldy (1995), in the absence of more specific and detailed knowledge, M&A selection decisions are strongly influenced by cultural stereotypes. There are similar examples in the marketing literature which demonstrate that consumer purchase decisions regarding foreign goods are influenced by the perceptions that individuals have about the country of origin (Zarkada-Fraser, 2001). However, evidence from Kakabadse and Myers (1996) challenges the accuracy of cultural stereotypes in business. In a study of European executives, they concluded that senior managers exercised four different broad management styles, but that only French

and German managers consistently conform to their supposed stereotypical national characteristics.

As ethnocentricity remains a potential problem and barrier to international M&A activity, the benefits of intercultural training initiatives need to be further explored (Stahl & Mendenhall, 2005).

(ii) INTEGRATION PROCESS VARIABLES

Acculturation Process

In many ways the separation of pre-merger characteristics from integration process variables is a false dichotomy as the essence of M&A integration involves an interaction between them. Research by Cartwright and Cooper (1992), Larsson and Lubatkin (2001), and Nahavandi and Malekzadeh (1988) suggests that the cultural dynamics of a merger or acquisition reflect the process of adaptation and acculturation and shape its outcome. Acculturation is an anthropological term, generally defined as 'changes introduced in (two cultural) systems as a result of the contact and diffusion of cultural elements in both directions' (Berry, 1980). Although this suggests a balanced two-way flow, Berry (1980) points out that the members of one culture frequently attempt to dominate the members of the other. The outcome of the acculturation process is seen as being dependent upon the way in which the process evolves or is managed and the extent to which any potential conflicts are resolved. According to Marks and Mirvis (2001) M&As are only likely to work if there is sufficient strategic and psychological preparation to ensure that both partners share a commonality of purpose and recognize and accept the terms of the relationship. This means that both parties must be in agreement as to the strategic intent of the combination.

According to Napier (1989) M&A integration strategies fall into three types: extension, redesign, and collaborative. When organizations decide to extend their activities into different areas, as in vertical M&As, cultural differences are not necessarily that important as the acquired business, at least in the short term, continues to operate separately. However, in redesign M&As, the strategy of the acquirer or dominant merger partner is to absorb and assimilate both the activities and culture of the acquired or smaller merger partner into its own and so monopolize on potential economies of scale. In these circumstances cultural differences may become an obstacle to the 'cloning' process, as the dominant culture may not be perceived by employees as an attractive and acceptable alternative to their pre-existing culture (Cartwright & Cooper, 1993b; Nahavandi & Malekzadeh, 1988). Similarly, a collaborative strategy intended to take advantage of shared knowledge and resources and the creation of a new 'best of both worlds' culture is dependent upon a degree of cultural consensus and mutual respect (Cartwright & McCarthy, 2005).

In a series of large-scale studies, Cartwright and Cooper (1992, 1993a, b) gathered data from more than 150 formal interviews and 600 questionnaires to analyze the impact of cultural dynamics on the integration or acculturation process across three acquisitions and two mergers. They found that the pre-existing cultures of the merging organization could either facilitate or obstruct the integration strategy adopted by the implementation team. In all but one of the M&As they studied a redesign strategy was adopted, which they described as representative of a 'traditional marriage'. This worked well and the mode of acculturation was accepted by employees in cases where the direction of cultural change was toward increased employee autonomy and was conflictual and problematic in terms of both employee behavior and organizational performance when employee autonomy was perceived to have been eroded. Although these studies were extensive in scale and influential in promoting subsequent research studies, the majority involved domestic M&As and relied heavily on retrospective measures of pre-existing cultures. In a longitudinal study of domestic mergers between accounting firms in Australia conducted by Ashkanasy and Holmes (1995), the researchers similarly found that disagreement between the parties as to the preferred mode of acculturation led to significant integration problems. These problems were found to center on the imposition of a dominant culture, which in turn reduced employee discretion.

More recently, Daly et al. (2004) conducted an innovative study examining the impact of pre-existing differences in espoused values on the post-merger financial performance of 59 M&As which took place during 1989–1996. Using the techniques of content analysis they examined publicly available archival data from which differences in espoused values were assessed and assigned numerical difference scores. The archival data took the form of the opening letters written by the company president or CEO in the annual reports published by the acquiring and target firms for the 3 years prior to the acquisition. Espoused values were organized around two main value themes: concern for employees and concern for production; a numerical difference score was constructed across each acquirer–target pair. A major strength of this study was that it incorporated a range of control variables, including prior acquisition experience, relative size, and prior performance. Hierarchical regression analysis revealed that similarities in pre-existing espoused values between target and acquirer (i.e., low difference scores) had a significant positive influence on post-acquisition financial performance, which explained 11% of the variance. Interestingly, none of the other control variables was found to be significant. As the authors point out, their methodology circumvents many of the problems associated with M&A research, such as poor access, retrospective bias and low response rates (Datta, 1991). However, espoused values have been found to differ from culture in use, particularly when publicly expressed in corporate communications (Cartwright & Cooper, 1997).

In a meta-analytic study of 50 domestic and international M&As, which occurred during the period 1959–1988, Larsson and Lubatkin (2001) investigated the impact of a range of variables on the extent to which acculturation was achieved. The independent variables included in the study were degree of autonomy removal, merger relatedness, relative size, social control, and nationality. The methodology adopted was that of a case survey, whereby qualitative descriptions from a range of individual case studies were converted and coded into quantified variables by multiple raters to enable comparisons to be made across the sample of cases. The majority of individual cases included in the survey were based on unpublished material or doctoral dissertations. The cases varied in length from 3 or 4 pages to over 400 pages. The sample consisted of 23 US domestic, 15 Swedish domestic, and 27 Swedish cross-border M&As. The study found that the most important variable associated with achieving acculturation was the degree of social control, with a significant positive correlation of 0.40 ($p < 0.001$), which explained an impressive 42% of the variance.

Social control was measured by just two items on a 5-point scale which required raters (1) to estimate the degree of effort expended through the use of various coordination mechanisms, such as transition teams, senior management and personnel exchanges (coordinative effort); and (2) to estimate the degree to which socialization activities such as introduction programs, training and social 'get-togethers' were used (degree of socialization). Interestingly, there was no direct correlation found between autonomy removal and achieved acculturation. However, further analysis, splitting the sample into two conditions, high/low autonomy, and deconstructing the Social Control Index into its two components, found that in the high-autonomy removal condition, both components, coordinative effort ($r = 0.59$) and degree of socialization ($r = 0.41$), were positively correlated with achieved acculturation, whereas in the low-autonomy removal condition only socialization ($r = 0.41$) was positively correlated with achieved acculturation. The authors conclude that reduced autonomy is not an obstacle to acculturation, provided that both aspects of social control are introduced.

The case survey method has undoubted strengths and would have been even more powerful if it had included the type of financial data incorporated in the Daly et al. (2004) study. However, it does have some observable weaknesses. The richness, extensiveness, and quality of the data together with the methodological rigor of the case studies is likely to have been highly variable, given that the descriptive material varied so much in terms of length and detail. This may have created difficulties for raters to code cases. Although there was an option in the coding system for 'insufficient information' it is not clear how frequently this option was used.

In summary, studies have consistently identified that the alignment of strategy with culture is a major challenge for M&A integration (Schweiger & Goulet, 2000). Several studies attest to the difficulty of resocializing

acquired employees particularly when different value systems are in operation (Carrol & Harrison, 2002; Larsson, 1993). Other studies have demonstrated that similarities in organizational and national cultures and management style reduce resistance and increase post-merger cooperation (Larsson & Finkelstein, 1999; Weber et al., 1996) and that differences adversely affect the transfer of knowledge (Empson, 2001). On the other hand, evidence from Larsson and Lubatkin (2001) suggests that culture clashes can be avoided through increased employee involvement in the integration process, even in situations where autonomy is restricted post merger. By utilizing the integration models proposed in the strategic management literature (Haspeslagh & Jamieson, 1991; Napier, 1989), the psychological literature on M&As has made some important advances in the last 10 years, generating testable hypotheses which can further inform our understanding of the acculturation process.

Development of Post-merger Identity

Research has shown that high levels of employee identification with the organization's identity is beneficial and results in increased work motivation, performance and organizational citizenship behaviors, and reduced labor turnover (Haslam, 2001). A proxy measure of successful M&A integration, therefore, is the speed with which employees put aside their separate pre-existing 'them and us' identities and assume a new shared organizational identity (Marks & Mirvis, 2001). The concept of identity has been discussed and researched within the M&A literature in relation to the sense of lost identity which employees experience at the time of acquisition and the process by which both employee groups form a new social and organizational identity.

In terms of the individual's response to M&A, a comparison is frequently drawn between the experience of acquisition and that of bereavement in that employees grieve the loss of their organization and its identity (McManus & Hergert, 1988; Mirvis, 1985; Schweiger, Ivancevich, & Power, 1987). Schweiger et al. (1987) likened the intensity of the feelings of loss experienced by acquired employees to the loss of a close family member, and Holmes and Rahe (1967) rate M&A as a highly significant life event in terms of its impact on stress and health. Both Hunsaker and Coombs (1988) and Mirvis (1985) have presented stage models to describe the way in which employees respond and adjust to the loss experience associated with M&A. These models, adapted from the clinical psychology literature (Kubler-Ross, 1969), highlight the feelings of denial, anger, and depression which employees experience prior to accepting the changed circumstances. It is only when employees have achieved some form of closure that they can move on and form a sense of identity with the new organization. Such stage models also accommodate the possibility of employee regression to, or

fixation at, an earlier stage in the bereavement cycle. Some evidence in support of these stage models has been found in interview data collected at different time points within the M&A process (Cartwright & Cooper, 1997; Kasstucher, 2004). However, there is also recent evidence to suggest that employees may become psychologically resilient to the negative emotional aspects of M&As, as a result of increased experience of such events (Cartwright & Hudson, 2000).

Findings from a correlational study examining the factors associated with employee trust post acquisition, conducted in Greece (Nikandrou, Papalaxandis, & Bourantes, 2000), suggest that the extent to which employees have confidence and trust in management may influence their reactions to the M&A event. Therefore, the universality of the proposed stage models needs to be further tested and would benefit from larger studies involving more systematic and quantitative investigation of a range of potential moderating variables. As well as employee attitudes toward the organization, studies should consider individual differences, such as tolerance to change (Hardin, 1967), and a range of demographic variables, including prior experience, age, job status, and tenure.

The process by which members of merged organizations form new identities has been studied within the context of Social Identity Theory (SIT) (Tajfel & Turner, 1979). In Chapter 2 in this volume Haslam and Ellemers (2005) discuss the potential value of SIT to industrial and organizational psychology more generally and the exponential rise in articles that make reference to the theory. SIT posits that individuals create and reinforce their identity by regarding themselves as members of certain groups or social categories and that membership of these social groups forms a significant part of their self-concept. An important part of establishing identity is linking with others as well as defining boundaries that separate and exclude the membership of certain others. Kleppesto (1998) suggests that SIT explains why, in an M&A situation, actors tend to emphasize cultural differences as part of the natural process of creating and maintaining social identities, boundaries, and social categories. Drawing upon case study data, Gertsen and Soderberg (1998) and Kleppesto (1998) argue that, although many M&As appear to result in conflict over various technical and procedural issues, such as policies, systems, and financial control processes, the underlying communication between the parties is at a relational rather than content level and that culture becomes a much used metaphor to convey those relational difficulties. Other European research studies (Dackert et al., 2003; Soderberg & Vaara, 2003) have also conceptualized the interaction of cultures and the resultant 'culture clashes' as a process of negotiation and sense-making, whereby organizational members seek to establish their social identity. Many of the studies grounded in a social constructionist approach have focused on the analysis of post-merger narratives provided by managers and employees (Gertsen & Soderberg, 2000; Vaara, 2002) as well as media

coverage (Schneider & Dunbar, 1992; Vaara & Tienari, 2002). These studies have been highly critical of integration research which has attempted to objectively measure cultural differences (Calori, Lubatkin, & Very, 1994; Datta, 1991; Morosini & Singh, 1994) as being superficial in adopting a structural–functional approach to culture.

In a laboratory-based experiment, Haunschild, Moreland, and Murrell (1994) demonstrated that groups that had a common identity, based on previous experience of working together, displayed stronger resistance to the prospect of group merger than groups with no shared work history. In a field study, Van Knippenberg, Van Knippenberg, Monder, and de Lima (2002) investigated how employee perceptions of partner domination influenced organizational identity post merger by conducting pre- and post-merger surveys. They found that organizational identity post merger is contingent upon a sense of continuity of identity, which in turn is contingent upon the extent to which the individual's own pre-merger organization dominates or is dominated by the other partner. If employees of a merging organization perceive that their organization will be dominant and that there will be little change, then it is more likely that they will preserve their identification with the former organization and that this identification will be transferred to the new organization. In contrast, if continuity is threatened it is less likely that employees will transfer their former identification to the new organization.

In another recent study investigating social identity, also using pre- and post-merger survey data, Dackert et al. (2003) reported similar results in that the threatened group were more inclined to respond to the survey items in a way which emphasized their own distinctiveness. The Dackert et al. (2003) study is interesting in that prior to the survey the researchers conducted a series of interviews with employee groups and used a variant of the repertory grid technique to elicit constructs which reflected perceived differences between the two organizations. These constructs were then used to generate questionnaire items. Several other studies (Hogg & Terry, 2000; Panchal & Cartwright, 2001; Terry, Callan, & Salori, 1996) have found that employees of the acquired or smaller merger partner have welcomed the opportunity provided by M&A to enhance their social identity (i.e., by joining a higher status and more prestigious social group). In the Panchal and Cartwright (2001) study of a UK merger of two sales teams, focus group discussions and questionnaires were used to collect data. Members of the dominant organization considered that combining with a less prestigious organization would diminish their status, whereas the acquired members felt their reputation and, hence, their ability to increase sales had benefited as a result.

The view of many researchers (e.g., Gertsen & Soderberg, 1998; Kleppesto, 1998) is that a new organizational identity will naturally evolve over time, suggesting that efforts by post-merger management teams to escalate the process are unlikely to be effective. There has been little research to

indicate whether a slow rate of change in M&As is preferable to rapid change, although compelling arguments have been presented on both sides (Nikandrou et al., 2000). Schweiger et al. (1994) favor quick-change implementation as being effective in reducing employee uncertainty and fulfilling employee expectations, whereas Buono et al. (1985) argue that employees can only accommodate a limited amount of change at any one time and advocate a slow and gradual approach. Results from the Nikandrou et al. (2000) study of 27 Greek acquisitions involving 133 administrative employees found that slow-change implementation erodes initial positivity toward merger and reduces trust in management. However, this study did not directly consider the concept of social identity and included a diverse sample of domestic and foreign acquisitions. Further research, comparing the pace and scheduling of change and its impact on organizational identity formation and other individual and organizational M&A outcomes, is clearly needed.

Human Resource Management Practices

According to a considerable number of researchers (e.g., Cartwright & Cooper, 2000; Gutknecht & Keys, 1993; Meeks, 1977; Sinetar, 1981) post-merger performance is adversely affected by lowered morale, which is often linked to perceptions of unfair treatment. Employees' perceptions of justice or fairness concerning how they are treated with regard to pay, promotion, and individual consideration have important consequences for organization performance more generally (Colquit, Conlon, Ng, Porter, & Wesson, 2001) and have become an important focus of psychological research (Folger & Cropanzano, 2001; Gilliland & Paddock, 2005; Greenberg, 1990, 2001; Korsgaard & Robertson, 1995). The concept of organizational justice is underpinned by equity theory (Adams, 1965), in that people expect to receive fair rewards for their work efforts and will reduce their efforts if they experience a sense of injustice. According to organizational justice theory, perceptions of fairness are linked to both procedural justice (how fair the organizational processes and procedures are) and distributive justice (how fairly the rewards are distributed). Employees who feel they are treated fairly and with respect have been shown to be more inclined to exhibit high levels of Organizational Citizenship Behaviors (OCBs) and do things for the organization over and above that which they are contractually obliged to do (Guest, 1998). High levels of OCB are considered to be desirable post merger to meet the demands of increased workload and increased employee flexibility (Cartwright & Cooper, 2000).

In the context of M&As perceptions of organizational justice and fairness concern not only the way in which new roles and rewards are allocated to those who are retained by the merged organization but also the ways in which termination decisions are made and the process of employee lay-offs is handled (Cartwright & Cooper, 2000). In addition, employee perceptions

and future expectations concerning organizational justice and consideration are likely to shape the terms of the psychological contract (Rousseau, 1995) which acquired employees will be seeking to re-establish with their new employer. If they consider that their new employer is unjust and lacking in consideration toward employees, then the reciprocal expectations which form the basis of that psychological contract between employer and employee are unlikely to extend beyond the transactional level to the deeper, more enduring relational level. M&A researchers have only recently begun to study the concept of organizational justice (Meyer, 2001). As yet this does not appear to have been extended to include consideration of the psychological contract.

However, there is a body of research evidence to suggest that the morale of survivors is adversely affected by employee lay-offs and the resultant increase in workloads (Brockner, 1986; Gutknecht & Keys, 1993). In a survey of over 50 US M&As, Jacobs (1988) found that 80% of the respondent organizations had initiated downsizing operations post merger and in 75% of cases the work performed by the redundant employees was reallocated among the remaining workforce. Although, initially, surviving employees report feelings of guilt, anger, and/or relief at the dismissal of co-workers, over time these feelings are often replaced by fear of future dismissals and anxiety and frustration about increased workloads (Brockner, 1986; Cartwright & Cooper, 2000). Furthermore, there is some limited, mainly anecdotal, evidence that feelings of injustice among displaced executives and employees can damage the reputation and performance of the merged organization (Cabrera, 1990). Not surprisingly, the literature has emphasized the importance of providing support, advice, and outplacement services to employees who are made redundant or are early-retired in the process of M&A (Gutknecht & Keys, 1993). The impact of organizational initiatives to assist redundant employees seems to have been little evaluated, although some years ago Allied Signal, who made 45 acquisitions over a 6-year period, attributed their success to the investment they made in a program to develop and retrain survivors (Fulmer, 1986). More recently, Summers and Holcombe (1990) conducted a small study of employees who lost their jobs following the closure of their division post merger. The employees were offered alternative employment elsewhere in the company, although this would have necessitated major relocation to another part of the US. Consequently, none of the employees took up the offer. Summers and Holcombe (1990) conducted a questionnaire survey to ascertain how fairly the employees felt they had been treated. A correlational analysis found partial support for the notion that the offer of alternative employment contributed to their satisfaction with and perceived fairness of their employer. Unfortunately, however, the sample size was less than 30, thus limiting the generalizability of the findings.

Schweiger and Very (2003) have observed that the allocation of post-merger roles and functions invariably benefit some employees and is perceived to disadvantage others. Power differentials between the organizations

are considered to influence the allocation process (Halvorsen, 1984). Other criteria, such as merit, equality, and seniority, which emphasize how important it is that acquiring management are not seen to favor appointing their existing staff over acquired employees, have also been mentioned (Marks & Mirvis, 1992, 2001). Systematic selection processes present a means of ensuring the equality criterion is met. However, such processes are lengthy and time-consuming and reselection and promotion decisions are more often made on the basis of seniority, which enables decisions to be made easily, quickly, and safely, in legal terms (Serpa, 1988).

Citera (2001) conducted a simulation study to investigate the criteria on which judgements of fairness are likely to be made in M&A situations. Students were presented with four different types of acquisition scenarios and asked to make judgements. It was found that the higher the degree of expected integration the more likely individuals were to expect more unfair and fewer fair changes to occur. Child, Faulkner, and Pitkethly (2001) have presented data to suggest that changes in relation to pay, promotion, and reward mechanisms are more pronounced in cross-border than domestic M&As. In a study of European mergers Very, Lubatkin, and Veiga (1997) found that changes in the perceived objectiveness of the performance and reward procedures were significant predictors of employee stress levels.

Meyer (2001) applied an organizational justice perspective to investigate the role allocation processes in two Norwegian mergers. Earlier studies (Fried, Tiegs, Naughton, & Blake, 1996; Newman & Krzystofiak, 1993) have found that the timing, criteria, and mechanisms used to allocate new roles can result in negative emotional and behavioral outcomes. In her study, Meyer (2001) conducted a series of interviews, supplemented by documentary and archival data and direct observation, to compare the experiences of key informants involved in a banking merger and an insurance merger. In terms of outcomes, Meyer discusses the comparative impact the allocation processes had on employee satisfaction and the difficulties that organizations may face in applying justice rules which satisfy both productivity- and relationship-oriented goals. In total, 78 interviews were conducted, some retrospective, others in real time. In the case of the banking merger, the partners were of a similar size but with significant performance differentials. In the selection of management and head office jobs, the distributive justice rules adopted by the bank prioritized equality (i.e., all individuals had an equal chance of receiving a role regardless of differentiating characteristics such as knowledge or ability). In practice, such rules translate into proportionality of jobs allocation relative to size. In contrast, seniority was used to reallocate other employee jobs and grades to staff. This led to extensive political negotiation in role allocation of managerial jobs.

In the insurance merger between two organizations of significantly different size, the distributive justice rules adopted prioritized equity (i.e., people should have received rewards consistent with their inputs). In both

organizations, justice rules were incorporated into the reallocation process but were far more extensive in the insurance merger. Both organizations were keen to ensure that they met two goals—economic productivity and the fostering of relationships. Whereas in the case of the insurance merger these goals appeared to have been compatible and employees seem to have been satisfied with the fairness and outcomes of the role allocation process, this was not true in the banking merger. The organization encountered problems meeting both goals and subsequently prioritized the economic goal at the expense of maintaining good relationships. Consequently, the distributive rules were changed and equity rather than equality became the priority, so that positions and functions could be reallocated in a quicker and more efficient manner. Employees of both merger parties were dissatisfied with the allocation process. Meyer suggests that the use of equity is open to abuse by managers pursuing their own interests. This, together with the time spent trying to establish fair procedural rules, raises doubts as to its viability as an approach to M&A role allocation. Meyer acknowledges that her findings and proposed hypotheses for future studies need to be tested in a variety of different M&A situations and national cultures, where perceptions of organizational justice may differ significantly.

(iii) COMMUNICATION AND TRUST

The M&A literature has continued to emphasize the importance of communication throughout the three stages of the process; that is, pre merger, the time the merger actually happens, and throughout the post-merger integration process (Gertsen & Soderberg, 1998; Marks, 1997; Risberg, 1997). Characteristically, employees involved in M&As report dissatisfaction with the amount of communication they receive (Napier, Schweiger, & Kosglow, 1993). In the absence of sufficient information, employees are considered to be 'too smart' to believe that nothing will change (Haspeslagh & Jamieson, 1991) and so create their own meanings to fill the void (Shearer, Homes, & Runge, 2001). It is argued that extensive and realistic communication can significantly reduce resistance to change, influence the adoption of new practices and cultures, dispel rumors and minimize uncertainty and employee stress (Appelbaum, Gandell, Yortis, Proper, & Jobin, 2000).

In a well-designed longitudinal study, Schweiger and De Nisi (1991) compared the impact of minimal communication with an extensive realistic merger communication program. The research was conducted in the US and involved two manufacturing plants belonging to one of two merging Fortune 500 companies. The study compared levels of employee uncertainty and job satisfaction between the two plants. Measures were taken 4 weeks before the announcement of the merger, 2 weeks after the merger announcement, 10 days later, and finally a further 3 months later. Measures were also taken to

assess employee perceptions of the company's trustworthiness, honesty, and caring. Over 70 employees at each plant completed questionnaires at each time stage. At one of the plants, the 'control' plant, employees did not receive any formal communications about the merger other than the initial letter from the CEO. This provided minimal information, which was typical of the approach adopted by the company in previous circumstances of organizational change. Employees at the other, 'experimental' plant received a similar letter but in addition were provided with information designed to provide a Realistic Merger Preview (RMP). The RMP program was introduced 1 week after the second survey administration and included a regular newsletter, weekly meetings between supervisors and staff, and the introduction of a telephone hotline to answer employees' queries. The results demonstrated that, at the time of the final survey, employees in the 'experimental' plant reported significantly lower levels of uncertainty and job dissatisfaction than those in the 'control' plant. Furthermore, their perceptions of the honesty and trustworthiness of the organization were also significantly higher.

Miller (1999) also advocates the value of communication events as being a useful tool for conveying company policy and other important issues to employees following a merger. Koonce (1991), in a survey of merged organizations, found that almost half of all respondents considered that communication had been a major contributor to maintaining good employee morale. Other studies have linked M&A success to the quality of communication and its positive impact on employee morale (Brandon, 1999; Citera & Rentsch, 1993; Sloan, 1993) and its effectiveness in breaking down cultural stereotypes and promoting shared values (Cartwright & Cooper, 2000). However, some researchers have cautioned against open communication in M&As, as this might alert competitors to impending changes or cause employees to leave rather than endure the painful consequences of remaining (Buono & Bowditch, 1989; Marks & Mirvis, 1998).

More recently, Nikandrou et al. (2000) have investigated the factors associated with organizational trustworthiness in a study of 27 domestic and cross-border acquisitions in Greece. Trust relates to the confident positive expectations that an individual has about the motives of another in regard to situations entailing risk. Trust is at the core of successful relationships and an antecedent of cooperation. The independent variables included in the study were frequency and usefulness of communication, employee relations, perceived uncertainty, and tolerance to change. In addition, three control variables—nationality, time of acquisition, and speed of change—were incorporated in the study in order to take account of acquisition characteristics. All the dependent variables, with the exception of job uncertainty, were significantly correlated with trust in management and were in the range of 0.20 to 0.45. Although a significant negative correlation between job insecurity and trust was not found, the relationship was in the expected direction, but weak ($r = -0.10$). The results of the basic regression analysis

found that the most significant factor in explaining the variance was good employee relations, followed by tolerance to change. A further regression analysis was conducted to examine the effect of acquisition characteristics. Some variation in pattern among the predictor variables was found, but unfortunately the article provides no information as to the numerical distribution of the sample across the various categories. Given the overall sample size, it is reasonable to assume that these data are likely to be weak.

In a study of a Swedish hospital merger, Engstrom, Rosengren, and Hallberg (2002) found that lack of trust in management was a significant predictor of employee commitment and involvement.

Some interesting studies have also been undertaken to examine the emotive language used in M&A communications, particularly the use of metaphors (Vaara, Tienari, & Santt, 2003). 'Marriage' has become a popular metaphor for mergers (Cartwright & Cooper, 1992; Jick, 1979) in differentiating between the terms on which the partnership is founded and emphasizing the emotionality and distinct stages of the evolving relationship. Discourse analysis of merger-related communication, press, and other media coverage has also highlighted the use of more brutal and aggressive metaphors, ones which have likened the event to war and rape (Vaara & Tienari, 2002). Sudarsanam and Mahate (2004) have also drawn attention to the way in which bidders are depicted in the media either as destructive and greedy 'raiders' or 'plunderers', or as friendly and chivalrous 'white knights', although their evidence, based on the performance of over 500 UK acquisitions, suggests that hostile takeovers tend to outperform friendly acquisitions.

(iv) EMOTIONAL AND BEHAVIORAL OUTCOMES

M&As have long been associated with a range of negative emotional and behavioral outcomes, including lowered morale, job dissatisfaction, increased stress, unproductive behavior, acts of sabotage, petty theft, increased staff turnover, and absenteeism (Bruckman & Peters, 1987; Hall & Norburn, 1987; Marks & Mirvis, 2001; Sinetar, 1981). This section focuses on two prominent research areas that have received considerable scholarly attention within the review period: merger stress and executive turnover.

Merger Stress

A number of studies have highlighted the fact that major organizational change and restructuring results in increased stress, confusion, and lost productivity (Gibbons, 1998; Koonce, 1991) and that it takes a significant period of time before satisfaction and trust is regained and stress levels decrease (Nelson, Cooper, & Jackson, 1995). Furthermore, stressful effects

of re-organization seem to be universal and are apparently little moderated by individual differences such as personality (Ashford, 1988). However, individual characteristics have not been extensively researched in the context of M&A stress. Idel et al. (2003), in a recent study of nurses involved in a hospital merger, suggests that self-efficacy may play a role in the appraisal of threat, but further studies, examining a more extensive range of individual characteristics, are needed.

The unexpected and non-routine nature of M&A events is considered to set the experience apart from other forms of organizational change and so further increase their stressful potential. Although Crouch and Wirth (1991) have argued that the impact of M&A is often exaggerated, there is a growing body of research evidence collected from both public and private mergers in a variety of cultural settings which challenges this view. Schweiger and Ivancevich (1987) have suggested that M&As are particularly stressful because employees have not developed an effective set of coping strategies to deal with such a novel and emotive situation that impacts on such a wide range of work issues. Subsequent research conducted by Cartwright and Hudson (2000) has confirmed that employees who experience a merger for the first time report significantly poorer levels of mental health than those who have had previous merger experience. Their study found that, irrespective of prior experience, the stress levels of merged employees were significantly higher as measured by the Pressure Management Indicator (Williams & Cooper, 1996) than a relevant normative group and that the differences in health outcomes were moderated by the superior adaptive coping skills of those who had encountered such events before. In particular, employees who had prior experience were more inclined to use problem-focused coping strategies than emotion-focused coping strategies to deal with experienced stress. Marks (1997) asserts that physical signs of stress are present in all M&As, even the friendliest and best managed combinations, primarily because they are events over which employees have little or no control. In support, he reports that incidents of high blood pressure among employees doubled from 11% in the year preceding an acquisition to 22% in the year following its announcement.

Cartwright and Cooper (1993a) conducted a post-merger study of 157 building society managers, using a clinical measure of mental health (Crown & Crisp, 1979). They found that managers from both merging organizations had significantly poorer mental health scores than the general population, with an abnormally high percentage scoring higher than psychoneurotic outpatients on one of the subscales. The effects were more pronounced among the managers from the smaller merger partner. Interestingly, the pre-merger cultures of both organizations were found to be very similar and in financial terms the merger was highly successful. They concluded that it appeared to be the expectancy of change and fears for future survival, rather than the actual change itself, which triggered merger stress. This is

consistent with an earlier qualitative study by Schweiger and Ivancevich (1987), thus suggesting that the most stressful time for employees is likely to be the period between learning of the intention to merge and the time any changes are actually implemented. Hence, mergers are likely to be more stressful than acquisitions because integration is a slower and more protracted process.

In a study of mergers within the educational sector in Northern Ireland, McHugh (1995) compared the health of a group of teachers from schools that had merged with those under a threat of merger, using the General Health Questionnaire (GHQ: Goldberg, 1972). She also included in her study a control group of teachers from schools that were not under any merger threat. The results indicated that teachers from those schools under threat reported the poorest psychological health. Compared with the control group, their psychological health was found to be significantly poorer. Again, abnormal threshold scores for the GHQ were reported by a high percentage of respondents, this being indicative of moderate to severe psychological disturbance. Siu, Cooper, and Donald (1997) found elevated stress levels relative to normative data among employees of an acquired television company in Hong Kong, as measured by the Occupational Stress Indicator (OSI: Cooper, Sloan, & Williams, 1988). However, in common with the other studies discussed, this study was cross-sectional in design. There are several additional cross-sectional studies to those discussed above, which have also reported evidence of high stress levels and mental distress post merger, both in the private (Begley, 1998; Gibbons, 1998; Very, Lubatkin, & Calori, 1998) and public (Gulliver, Towell, & Peck, 2002; Idel et al., 2003) sectors.

In sum, M&A stress is an area which would greatly benefit from longitudinal research to identify the extent to which the potential sources and effects of stress vary over time in terms of their nature and intensity.

Executive Turnover

A growing number of studies (Buchholtz, Ribbens, & Houle, 2003; Cannella & Hambrick, 1993; Hambrick & Cannella, 1993; Krug & Hegarty, 1997; Unger, 1986; Walsh, 1988) have shown that M&As result in increased levels of executive turnover among acquired companies, compared with matched non-acquired organizations over the common time periods.

In a study of 55 US acquisitions, Walsh (1988) found that a quarter of senior executives left in the first year post acquisition. Furthermore, after 5 years only 40% of senior executives still remained in the acquired organizations. Unger (1986), in a large study of 150 acquisitions, reported an even higher turnover rate of 50% in the first year. By the end of 3 years, a total of 75% of senior executives were no longer working for the acquired firms. More recent studies (Cannella & Hambrick, 1993; Hambrick & Cannella, 1993; Krug & Hegarty, 2001) suggest that about one-third of senior

executives in acquired organizations are involuntarily terminated and another third leave voluntarily within 2 years post acquisition.

UK research examining turnover among 100 large acquisitions found that only 43% of CEOs remained in post 2 years after the acquisition (Angwin, 1996). Buchholtz et al. (2003) tracked the rate of senior executive turnover among 161 uncontested acquisitions over a 4-year period. Their findings were consistent with previous studies in that 75% of executives had left by the end of 3 years. However, executive turnover continued into the 4th year, when a further 25% left the acquired organization.

Krug (2002) conducted a longitudinal analysis of post-acquisition turnover by comparing senior management turnover rates among 89 US acquisitions with 90 control firms. The strength of this study is that data were collected over a 15-year period. This period included the 5 years prior to the acquisition, the year of the acquisition, and 9 years post acquisition. The study showed that the acquired and non-acquired organizations were well matched in that executive turnover rates were not significantly different in the 5 years prior to acquisition. Consistent with previous research, average turnover rates among incumbent executives was significantly higher in acquired than non-acquired organizations and was highest in the 1st and 2nd years post acquisition. The rate of executive turnover among new-hires was also investigated. Interestingly, it was found that over the 9-year period post acquisition, the overall executive turnover rate, including new-hires, averaged nearly 19% per year in the acquired companies. This was twice as high as in the control group, which lost an average of 9% of their executives each year. On the basis of this evidence, it would seem that acquisitions can result in long periods of employment instability and changes in top management teams that impact upon both existing and new-hire executives. While it has been argued that changes in top management teams are crucial for acquisition success (McCann & Gilkey, 1988), the evidence to support this remains equivocal (Cannella & Hambrick, 1993; Krishnan, Miller, & Judge, 1997). Future research needs to take more account of the match between leadership skills and the proposed integration strategy (Haspeslagh & Jamieson, 1991; Schoenberg & Norburn, 1998; Thach & Nyman, 2001).

Several theories have been advanced to explain the post-acquisition departure of senior executives. The market discipline perspective (Walsh & Ellwood, 1991) suggests that poor performers are the most likely to leave, and acquirers make their initial retention decisions on the basis of the pre-acquisition performance of the target company. If acquirers consider that they already have an abundance of managerial talent within their own organization who understand 'the logic' (Napier, 1989) of the acquisition, then target company executives are likely to be perceived as being surplus to requirements, a response that has been described as 'acquirer arrogance' (Jemison & Sitkin, 1986), which can lead to the loss of the most talented (Very, 1999).

Relative standing theory (Hambrick & Cannella, 1993) presents an alternative view. According to this theory, executives leave acquired companies due to conflictual relationships or because they experience an erosion in their status and/or feel inferior relative to acquiring management. Empirical support for this theory has come from a number of studies which have shown that differences in organizational size tend to be associated with a greater loss of status and autonomy and an increased propensity to leave (Hayes & Hoag, 1974; Humpal, 1971).

More recently, executive turnover has been explained within the context of human capital theory (Phan & Lee, 1995; Siehl, Smith, & Omura, 1990). According to this theory, incumbent CEOs and other members of top management teams have value as human capital in terms of the stock of knowledge and skills they possess. Both incumbent executives and acquiring management conduct a cost–benefit analysis when deciding the value of employment continuance. Acquirers will weigh the costs of retaining executives against the benefits of future returns when deciding the level of future investments needed to retain and develop human capital. Similarly, acquired executives consider the effort and time investments which they might need to make to adjust to the new rules and expectations of the acquirers against the future benefits of doing so. According to Buchholtz et al. (2003), the effect of age on the human capital calculation is significant. In their study of acquired executive turnover, they found that the rate of departure was greatest for the oldest and youngest CEOs and lowest for middle-aged CEOs between 45 and 54 years of age. This was attributed to the greater mobility and less emphasis placed on money and security by younger executives and the declining motivation of older executives to invest further effort and time in their careers as they approach retirement age. It has also been argued by Cartwright and Cooper (1997) that members of an acquired organization choose to move to other organizations because they prefer to select the type of organizational culture they wish to join rather than face the prospect of having a culture imposed upon them by the acquirer or dominant merger partner.

One of the problems associated with the study of executive turnover is the difficulty in differentiating between (1) outright dismissals, (2) financial inducements to leave, and (3) voluntary resignations. Information is hard to ascertain due to the sensitivity of the situation and possible fears of litigation. While the focus of post-acquisition labor turnover has been predominantly on executive turnover, unplanned personnel losses have been shown to occur at all levels in the acquired organization. Graves (1981) conducted a total population survey of a UK merger between two re-insurance brokers and found that a third of all employees had left within less than 2 years post acquisition. Similarly, Cartwright and Cooper (1997) reported employee turnover rates as high as 60% in the 1st year post acquisition.

(iv) ULTIMATE PERFORMANCE

Over the last decade the M&A literature has continued to expand and the awareness of both researchers and practitioners to the importance of human factors and the psychology of M&As has increased. Consequently, there is no shortage of advice to managers as to how they might improve the selection and performance of M&As (Balmer & Dinniek, 1999; Di Georgio, 2003; Tetenbaum, 1999). Balmer and Dinniek (1999) highlight the role of leadership and communication and the importance of securing the goodwill of stakeholders common to both organizations. Yet, in terms of providing empirical evidence to demonstrate the potential link between leadership and M&A performance, the psychological literature has remained, to date, surprisingly silent. Without doubt, psychology has important things to say and contribute to the M&A phenomenon. However, with a few exceptions (e.g., Cartwright & Cooper, 1997; Daly et al., 2004), it has failed to demonstrate the actual financial costs to organizations of poor organizational fit, ineffective acculturation processes, high staff turnover, merger stress, and other dysfunctional employee behaviors and how these costs directly and indirectly impact on the ultimate performance of M&As.

In increasingly large numbers, finance scholars continue to analyze the ultimate performance of M&As and further refine and elaborate the methodologies they use to do this (Baker & Limmack, 2001; Gregory, 1997; Sudarsanam & Mahate, 2004). Yet, despite the academic rigor of these studies, there has been little change in acquisition failure rates over the last 50 years. In a recent meta-analytic study of M&A performance King, Dalton, Daily, and Covin (2004) announced that the most frequently studied variables in the finance and strategy literature offered no significant explanation of M&A outcomes and that 'post acquisition performance is moderated by variables unspecified in existing research'. The challenge for the psychology literature is to find ways of linking behavioral research and associated methods to the largely independent literatures of finance and strategy to address this shortcoming.

SUMMARY AND CONCLUSIONS

While more attention has been paid to theory-building and testing since the Hogan and Overmeyer-Day review (1994), there are still many psychological variables, such as leadership, motivation, commitment, consultation, trust, and readiness for change, which have been little investigated in M&A settings. Also, there is a continuing need for larger scale cross-sectional and longitudinal studies. At present the psychology of M&As still remains an eclectic and independent literature. Progression ultimately requires a multi-disciplinary approach to develop a more holistic understanding of

the processes and outcomes of M&As and a greater refinement of measures to better capture the unfolding dynamics of M&A activities.

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Chapter 2

SOCIAL IDENTITY IN INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY: CONCEPTS, CONTROVERSIES AND CONTRIBUTIONS

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It is now 25 years since the publication of Tajfel and Turner's (1979) seminal statement on social identity theory and 15 years since Ashforth and Mael (1989) published their classic *Academy of Management Review* article pointing to the potential value of using this theory to enhance researchers' understanding of organizational life. Whatever else the latter article may have achieved, it is clear that it was highly prophetic, as, over the intervening period, industrial and organizational psychologists' interest in social identity and related concepts has increased at a phenomenal rate. On top of nearly 300 citations of the Ashforth and Mael paper, this is indicated, among other developments, by the publication of several key books and journal special issues devoted to research in this area (e.g., Albert, Ashforth, & Dutton, 2000; Haslam, 2001, 2004; Haslam, van Knippenberg, Platow, & Ellemers, 2003; Hogg & Terry, 2001; Tyler & Blader, 2000; van Knippenberg & Hogg, 2001) and the exponential rise in articles that make reference to the terms 'social' and/or 'organizational' identity (for details see Haslam, 2004, p. xxv; Haslam, Postmes, & Ellemers, 2003). As the range of journals listed in Table 2.1 indicates, it is also apparent that this research has had a broad as well as a deep impact on the field.

These trends indicate that a thoroughgoing review of the status of social identity in industrial and organizational fields is very timely (see also

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Table 2.1 Outlets for articles on 'social identity' and 'organizations' (1990–2004).*

Organizational psychology journals		Frequency	%
Academy of Management Journal		8	
Academy of Management Review		7	
Administrative Science Quarterly		8	
Applied Psychology: An International Review		3	
British Journal of Management		2	
Group and Organization Management		2	
Hispanic Journal of Behavioral Sciences		2	
Human Relations		13	
International Journal of Human Resource Management		6	
Journal of Applied Psychology		4	
Journal of Management		2	
Journal of Management Studies		2	
Journal of Marketing		2	
Journal of Organizational Behavior		7	
Journal of Occupational and Organizational Psychology		5	
Organization Science		5	
Research in Organizational Behavior		9	
Zeitschrift für Arbeits und Organizationspsychologie		3	
Other ($N = 1$ per outlet)		32	
	Total	*122*	*73*
Social/General psychology journals		**Frequency**	**%**
British Journal of Social Psychology		4	
European Journal of Social Psychology		1	
Group Processes & Intergroup Relations		4	
Journal of Applied Behavioral Science		2	
Journal of Applied Social Psychology		4	
Personality and Social Psychology Bulletin		4	
Personality and Social Psychology Review		3	
Other ($N = 1$ per outlet)		23	
	Total	*45*	*27*

* These publications came up in an electronic search, carried out with the following criteria: In ISI Web of Science (SCI-Expanded and SSCI) a full search was carried out for literature published between 1990 and 2004 (all languages) with the search terms 'social identi* and organization*' and with 'social identi* and organisation*'. This yielded 213 hits. According to the same specifications a search was also carried out with Webspirs (Psychlit), which yielded 179 hits. After excluding duplications, obviously non-relevant publications, unpublished dissertations, and book chapters, this resulted in 167 unique hits.

Hodgkinson, 2003). Not least, this is because commentators have recently identified concerns and confusions that lead them to call into question the capacity for social identity work to contribute to theoretical and practical progress (e.g., see Cornelissen, 2002a; Jost & Elsbach, 2001; Polzer, Milton, & Swann, 2002). Although a recent contribution in this series by

van Dick (2004) also examined how identification in work contexts can be understood from a social identity perspective, this previous contribution focused on examining the relevance of the concept of identity for the analysis of organizational behavior, with a particular emphasis on organizational mergers and group productivity (see also Cartwright, 2005). The goal of the present chapter is different, as we aim to address the social identity approach to organizational behavior in a broader sense. Thus, our present aim is to review developments in this area and, in the process, both (a) engage with and resolve controversies that have arisen in the field and (b) identify those research avenues that have been associated with most progress and which hold out the most promise for future advance.

A key conclusion that emerges from this review is that, while the social identity perspective has delivered—and should continue to deliver—a considerable return on the investment of research energy, the dividends of this activity are contingent on close attention being paid to the core theoretical concepts which lie at its heart. This is because, as social identity work develops and becomes ever more influential, there is a danger these ideas will be diluted and simplified and that, as a result, the approach will lose its explanatory and practical power (Ellemers, Haslam, Platow, & van Knippenberg, 2003; Turner, 1999). In order to offset this possibility, a core goal of this chapter is to (re)connect the field with underlying theory and to demonstrate that it is through a detailed elaboration of those forms of understanding first signalled by Tajfel and Turner (1979) that the best prospects for the future lie.

SOCIAL IDENTITY CONCEPTS

Social Identity and the Search for Positive Distinctiveness

Within social psychology the concept of social identity grew from an awareness of the reality of the group and of its distinctive contribution to social cognition and behavior. A core idea here was that groups are not only external features of the world, they are also *internalized* so that they contribute to a person's *sense of self*.

The specific empirical catalyst for this insight was a series of (now famous) studies conducted by Tajfel and his colleagues in the early 1970s (Tajfel, 1970; Tajfel, Billig, Bundy, & Flament, 1971). These were designed to identify the minimal conditions that would lead members of one group to discriminate in favor of the *ingroup* to which they belonged and against another *outgroup*. For this purpose, participants were assigned to groups that were intended to be as empty and meaningless as possible—the goal being to add meaning to the situation in order to discover at what point people would start to discriminate against the outgroup. Participants were led to believe that assignment to groups was made on the basis of trivial

Points for member of													
Klee group:	7	8	9	10	11	12	13	14	15	16	17	18	19
Kandinsky group:	1	3	5	7	9	11	13	15	17	19	21	23	25
	MD						F						MIP MJP

Figure 2.1 A typical matrix from a minimal group study.
Based on Tajfel (ed.) (1978), *Differentiation between Social Groups: Studies in the Social Psychology of Intergroup Relations*, London: Academic Press. *Note*: Participants decide how many points to award to the ingroup and outgroup member by selecting one pair of numbers. In this example, a participant in the Klee group would make a choice towards the left-hand end of the matrix to achieve the maximum gain of the ingroup member relative to that of the outgroup member (MD). A choice in the middle of the matrix would achieve fairness (F), and one towards the right-hand end would achieve maximum joint group profit (MJP) and maximum ingroup profit (MIP). The shaded response thus indicates a compromise between strategies of maximum difference and fairness.

criteria, such as their preference for the abstract painters Klee and Kandinsky. Actually, though, assignment to one or other of the groups was random. (In fact, all participants were assigned to the same group.)

As is now well known, the key finding that emerged from these *minimal group studies* (as they were later dubbed) was that even the most stripped-down conditions were sufficient to encourage ingroup-favouring responses. That is, when using matrices like those in Figure 2.1 to assign points to unidentified members of the ingroup and outgroup, participants tended to deviate from a strategy of fairness by awarding more points to ingroup members than outgroup members. In so doing, the participants explicitly eschewed a strategy that would serve to maximize their ingroup's *absolute* economic gain in favor of one that maximized their *relative* gain over the outgroup.

For Turner (1975) and Tajfel (1978) the most important upshot of the minimal group studies was that they suggested that the mere act of individuals *categorizing themselves* as group members was sufficient to lead them to display ingroup favoritism. This conclusion was at odds with the predictions of psychodynamic and utilitarian theories (e.g., Dollard, Doob, Miller, Mowrer, & Sears, 1939; Sherif, 1966) and implied that significant forms of group behavior (in this case discrimination) could not be fully explained if they are understood solely 'in terms of "objective" conflicts of interest or in terms of deep-seated motives that [they] may serve' (Tajfel et al., 1971, p. 176).

Since Tajfel et al.'s (1971) initial studies, these findings have been extensively replicated and research has served to underline the role that internalized group membership plays in the observed results (Tajfel, 1978). Significantly, too, applied research by Brown (1978) has shown that the basic motivations revealed in minimal group settings are reproduced in work environments. For example, when employee groups negotiate wage settlements, a key goal is often not simply to earn as much as possible, but to preserve wage *differentials* that ensure one's own group earns more than others.

One of the critical points that Tajfel (1972) himself saw to emerge from the aforementioned minimal group studies was that when participants categorized themselves as members of a group this gave their behavior a *distinct meaning*. More specifically, he argued that 'social categorization required the establishment of a distinct and positively valued *social identity*' (Tajfel, 1972, p. 37, emphasis added). He defined social identity as 'the individual's knowledge that he [or she] belongs to certain social groups together with some emotional and value significance to him [or her] of this group membership' (p. 31). In other words, social identity is part of a person's sense of 'who they are' associated with any internalized group membership (see also Ellemers, Kortekaas, & Ouwerkerk, 1999). This can be distinguished from the notion of *personal identity* which refers to self-knowledge that derives from an individual's unique attributes (Turner, 1982).

Social Identity Theory

Having noted the distinct ability of social identity to 'create and define the individual's place in society', Tajfel and Turner (1979, pp. 40–41) went on to formulate their *social identity theory* of intergroup behavior. As the title of their seminal chapter pronounced, this is an 'integrative theory' that attends to both the cognitive and motivational bases of intergroup differentiation. In essence it suggests that after being categorized in terms of a group membership, and having *defined themselves* in terms of that social categorization, individuals seek to achieve or maintain positive self-esteem by positively differentiating their ingroup from a comparison outgroup on some valued dimension. This quest for *positive distinctiveness* means that when people's sense of who they are is defined in terms of 'we' rather than 'I', they want to see 'us' as different to, and preferably as better than, 'them' in order to feel good about who they are and what they do.

In the minimal group situation Turner (1975) argued that, if participants identified with the social group they were assigned to, they engaged in a process of *social competition* involving comparison of the ingroup and the outgroup on the only available dimensions (point allocations). Participants then achieved positive distinctiveness for their own group by awarding it more points than the other group. This interpretation has been supported by a considerable body of subsequent research (for reviews see Brewer, 1979; Hogg & Abrams, 1988; Turner, 1982; van Knippenberg & Ellemers, 1990). As Brown's (1978) research also shows, similar outcomes can be achieved in organizational contexts where employees strive to ensure that their ingroup not only does well, but does *better* than relevant others (see also Ashforth & Mael, 1989; Brown, Condor, Mathews, Wade, & Williams, 1986; Dutton & Dukerich, 1991; Dutton, Dukerich, & Harquail, 1994). Such aspirations are routinely reflected in organizational mission statements which seek to

competitively position organizations (and their employees) in relation to key rivals. Consider, for example, the following advice:

> 'The most successful company missions are measurable, definable, and actionable project statements with emotional appeal that everyone knows and can act upon. For example, a mission to 'be the best health-care provider in the world' for a multi-national HMO organization sounds good. But a simple mission statement from Honda—'beat GM!'—is better'.
> (CCH Business Owner's Toolkit, 2004)

As we will discuss in more detail below (pp. 60–63), it is *not* the case, however, that social identity theory conceptualizes ingroup favoritism as an *inevitable* consequence of group membership. In both social and organizational literatures, researchers often assume that 'social categorization produces bias', but Tajfel and Turner (1979, p. 41; see also Oakes, Haslam, & Turner, 1994, p. 83) identified three variables upon which such an outcome depends. These were (a) the extent to which individuals identify with an ingroup and internalize that group membership as an aspect of their self-concept, (b) the extent to which the prevailing context provides ground for comparison and competition between groups, and (c) the perceived relevance of the comparison outgroup, which itself depends on the relative and absolute status of the ingroup. Individuals are therefore likely to display favoritism only when an ingroup is central to their self-definition, when a given comparison is meaningful, and when the outcome of that comparison is in some sense contestable. In cases where these conditions are not met, people will not cease to pursue a positive social identity, but they will employ a *different strategy* to achieve this general goal.

The Interpersonal–Intergroup Continuum and Strategies of Self-enhancement

Despite the fact that the minimal group studies constitute the piece of research with which social identity theory is classically associated, in fact they provide only limited insight into the theory's analytic potential. A second important set of ideas examines how people's cognition and behavior are affected by movement along an interpersonal–intergroup continuum. These ideas developed from Tajfel's (1978) argument that behavior in general could be represented in terms of a bipolar *continuum* (see Figure 2.2). At one pole of this continuum, interaction is determined solely by the character and motivations of the individual *as an individual* (i.e., interpersonal behavior). At the other pole, behavior derives solely from the person's group membership (i.e., intergroup behavior). In making this distinction, Tajfel suggested that intergroup and interpersonal behavior were qualitatively distinct from each other: groups are not just collections of individuals and group behavior cannot be

Social identity salience	
Low	high
Behavior	
Interpersonal	intergroup
Reflected in	
Perceived outgroup heterogeneity	Perceived outgroup homogeneity
Non-uniform treatment of outgroup	Uniform treatment of outgroup
Associated with	
Social mobility beliefs	Social change beliefs

Figure 2.2 Psychological and behavioral continua associated with the interpersonal–intergroup continuum.

After Tajfel (1978); reprinted from Haslam (2001), *Psychology in Organizations: The Social Identity Approach* (1st edn), London: Sage Publications.

explained in terms of interpersonal principles (see also Asch, 1951; Mayo, 1949). Furthermore, he argued that social identity processes come into play to the extent that behavior is defined at the intergroup extreme of this continuum.

Exactly where individuals place themselves on the interpersonal–intergroup continuum was understood by Tajfel to be a consequence of an interplay between social and psychological factors. Among these psychological factors, he argued that a person's ideological *belief structures* were particularly important. As Figure 2.2 indicates, these were seen to lie on another continuum between an ideology of *social mobility* and one of *social change* (Tajfel, 1975). Social mobility beliefs are characterized by a view that people are free to move between groups in order to improve or maintain their social standing. They are underpinned by an assumption that a given social system is flexible and, in particular, that the boundaries between groups are permeable. Social change beliefs, on the other hand, are underpinned by an assumption that it is not possible to escape one's group in order to advance as an individual. If one endorses such a view, the only prospect for improving negative conditions (or maintaining positive ones) is seen to lie in collective action.

Social identity theory's third strand integrates elements of the two that have already been discussed—analysis of discrimination in the minimal

group studies and of movement along the interpersonal–intergroup continuum. It does this by examining how people's shared understanding of status relations leads to *different strategies* for self-enhancement. How does a person's status, and the perceived basis of that status, affect their attempts to try to feel positive about themselves?

Among other things, social identity theory's answer to this question takes into account the extent to which people perceive group boundaries to be *permeable* and perceive their group's relative position on a dimension of social comparison to be *secure* in the sense of being both *stable* and *legitimate*. These perceptions are argued to have an impact on the strategies pursued by members of both low- and high-status groups. However, because Tajfel was primarily interested in the processes whereby low-status groups bring about social change, as originally formulated, social identity theory focused on the behavioral strategies of people who were members of low-status groups. These strategies are summarized schematically in Figure 2.3.

In brief, social identity theory proposes that, when members of low-status groups believe group boundaries are permeable, they should favor personal identity-based strategies of *individual mobility*—attempting simply to 'pass' from the low-status group into the more valued one. They should try to 'get

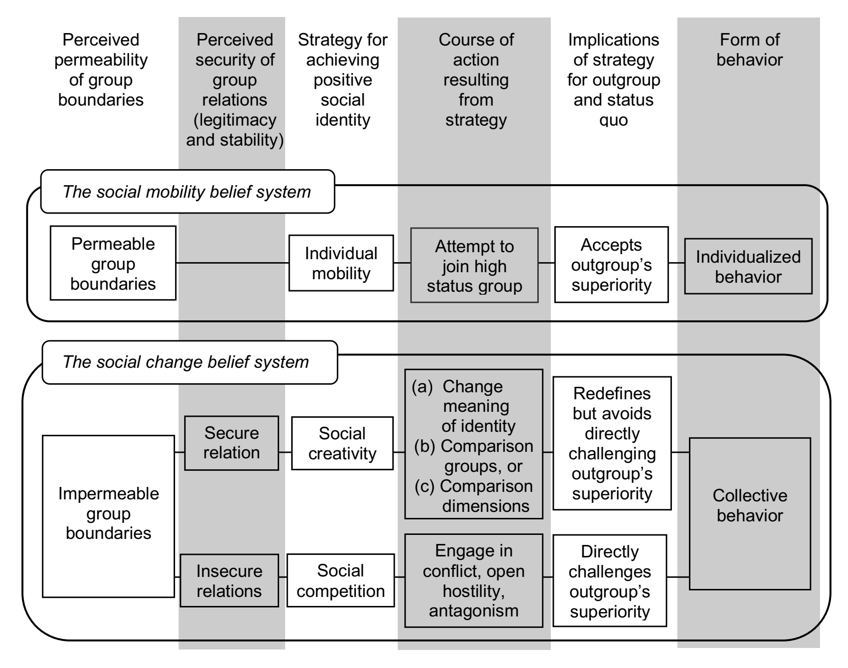


Figure 2.3 Social identity theory's predictions concerning the relationship between perceived social structure and strategies of self-enhancement for members of low-status groups.
After Tajfel & Turner (1979); reprinted from Haslam (2001), *Psychology in Organizations: The Social Identity Approach* (1st edn), London: Sage Publications.

ahead' by 'getting out'. However, when they believe boundaries are impermeable (so that group membership is fixed and 'getting out' is impossible), such strategies are ruled out. Here, if social relations are secure, low-status group members are predicted to try to redefine either (a) the nature of the intergroup relationship or (b) the value of the ingroup (or both) by demonstrating *social creativity*. They might do this, for example, by embracing a belief that 'We may not be as wealthy as them, but we're more friendly' (Ellemers, van Rijswijk, Roefs, & Simons, 1997; Terry, Carey, & Callan, 2001). If relations are impermeable and *in*secure, members of low-status groups are more likely to engage in *social competition* with the high-status outgroup—engaging collectively in conflict processes designed to change the status quo (in ways that individual and social creativity do not).

Over the last 15 years a large body of social psychological research has supported these various predictions and elaborated their implications for a range of social phenomena. In particular, basic experimental research by Ellemers and her colleagues has confirmed that structural changes to intergroup relations do impact on low-status group members' behavior in ways envisaged by social identity theory (Doosje, Spears, & Ellemers, 2002; Ellemers, 1993; Ellemers, Wilke, & van Knippenberg, 1993). Research by Wright and his colleagues has also shown that members of low-status groups are far more likely to pursue strategies of conflict when access to a high-status group is impossible and the behavior of that group appears illegitimate. Under other conditions—especially when the high-status group promotes some 'token' low-status group members—low-status group members' behavior is far less likely to challenge the status quo (Wright, 1997; Wright & Taylor, 1998; Wright, Taylor, & Moghaddam, 1990; see also Boen & Vanbeselaere, 1998; Haslam & Reicher, 2002; Lalonde & Silverman, 1994; Reynolds, Turner, & Haslam, 2000; Stott & Drury, 2004; Taylor, Moghaddam, Gamble, & Zellerer, 1987). As we will see below (pp. 73–74), in the last decade these hypotheses have also proved particularly fertile for organizational researchers seeking to understand the ways in which members of low-status groups in the workplace (e.g., women, 'dirty workers', members of ethnic minorities) respond to their predicament.

Self-categorization Theory

The previous section makes it clear that social identity theory is considerably richer than many textbook discussions suggest. In particular, the theory does much more than specify a link between assigned group membership and ingroup favoritism. Tajfel and Turner's (1979) analysis thus broaches a range of issues pertaining not just to social discrimination, but also to social categorization and social comparison, and not just to psychology, but also to social structure and behavioral strategy (three arms of the theory that Tajfel, 1979, p. 184, referred to as a 'conceptual tripod' upon which the

theory depended for its explanatory power; see Turner & Haslam, 2001). This complexity has led researchers in this tradition (e.g., Haslam & Reicher, 2002; Turner, 1999) to note that there is some danger in seeing the minimal group studies as providing a full (or even a representative) realization of the theory.

Nevertheless, despite social identity theory's richness, there are certain core questions concerning the nature, operation, and purpose of social identity that it does not address. What functions does social identity serve? What makes it salient? And what are its consequences? It was partly to answer such questions that *self-categorization theory* was developed by Turner and his colleagues in the 1980s (Turner, 1982, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994).

Self-categorization theory has a broader cognitive agenda than social identity theory and has greater explanatory scope, largely because its core hypotheses are not targeted specifically to issues of social structure and intergroup relations (Turner & Haslam, 2001; see also Haslam, 2001). So, although the terms *social identity approach* or *social identity perspective* can be used as shorthand for the full range of arguments and hypotheses that are generated by the two theories, there is intellectual and practical value in continuing to distinguish between them (Turner, 2004).

Formative work on self-categorization theory focused on the theoretical implications of the notion of social identity itself. In particular, to explain individuals' movement along Tajfel's interpersonal–intergroup continuum, Turner (1982) hypothesized that an individual's self-concept could itself be defined along a continuum ranging from a definition of the self in terms of personal identity to a definition in terms of social identity. Moreover, he proposed that the functioning of the self-concept *is the cognitive mechanism that underpins* the behavioral continuum described by Tajfel (1978). Turner (1982) thus argued that social identity actually *allowed* intergroup behavior to take place. As he put it, 'social identity is the cognitive mechanism that makes group behavior possible' (p. 21). Applying this idea to the organizational domain, one can argue that organizational identity (a social identity associated with membership of a given organization or organizational unit) is what makes organizational behavior possible (Haslam, Postmes et al., 2003).

A further important part of Turner's contribution was to specify a *psychological process* associated with the 'switching on' of social identity. Turner (1982) called this *depersonalization*. This refers to a process of *self-stereotyping* through which *the self comes to be perceived as categorically interchangeable with other ingroup members*. Elaborating upon Tajfel's (1978) hypothesis that in intergroup contexts individuals will tend to perceive outgroups as homogeneous (see Figure 2.2), Turner predicted that social identity salience should lead to the *ingroup* being seen as similarly homogeneous. Employees who are involved in conflict between their company and another should therefore tend to emphasize similarities among

members of *both* companies—not just the rival one (see also Doosje, Ellemers, & Spears, 1995). Similar processes may also emerge at a higher level of categorization. For instance, Peteraf and Shanley (1997) observe that, for strategic reasons, rival firms sometimes emphasize the similarities among them as they position themselves as belonging to the same group within the broader industry (see also Hodgkinson, 2001a, b; Hodgkinson & Sparrow, 2002).

For the purposes of the analysis of organizational behavior, this argument is crucial. In essence, it suggests that group behavior is associated with qualitative changes in the structure of the self. As an individual, 'who one is' (and therefore what one *does* and *seeks* to do) is defined in terms of one's idiosyncratic personal attributes, but as a group member the self (and the actions and aspirations this dictates) is defined in terms of stereotypical attributes (e.g., values and goals) that are shared with others who are perceived to be representative of the same social category.

The main contribution of early work on self-categorization theory was to elaborate upon the workings and implications of this depersonalization process. This elaboration was formalized in a number of core assumptions and related hypotheses of which five are most important (Turner, 1985; Turner et al., 1987; see also Oakes, 1996; Oakes, Haslam, & Turner, 1994, 1998).

First, cognitive representations of the self take the form of *self-categorizations*. That is, the self is seen as a member of a particular class or category of stimuli. As such it is perceived to be (a) more or less equivalent to the other stimuli in that category, and (b) more or less distinct from stimuli in other categories. So, for example, when a woman categorizes herself as a doctor she acknowledges her equivalence to other doctors and her difference from, say, nurses or patients.

Second, self- and other categories exist at different levels of abstraction with higher levels being more inclusive (cf. Rosch, 1978). Lower level categories (e.g., doctor, nurse) can be subsumed within higher ones (e.g., health professional) and are defined in relation to comparisons made at those higher levels. Three levels of abstraction are particularly important: self-categorization (a) at the superordinate *human* level as a human being (in contrast to other species), (b) at the intermediate *social* level as an ingroup member (as distinct from outgroups), and (c) at the subordinate *personal* level as a unique individual (different from other relevant ingroup members). Importantly, self-categories at all levels of abstraction are seen to be equally 'real' and just as much a reflection of a person's 'true' self. No one level of self-categorization is inherently more appropriate or useful than another and, hence, none is in any sense more accurate or more fundamental to who or what the person is. It is worth noting too, that this proposition is at odds with the general tendency for organizational and industrial psychologists (after Münsterberg, 1913) to give privileged status to personal identity—believing that a person's *true* self is defined by their individuality and that departure from this necessarily involves a distortion of the self.

Third, the formation and salience (i.e., cognitive activation) of any self-category is partly determined by comparisons between stimuli at a more inclusive level of abstraction. More specifically, the formation of self-categories is a function of the *meta-contrast* between inter-class and intra-class differences. This means that within a frame of reference comprising salient stimuli, any given collection of stimuli will be perceived as a categorical entity to the extent that their differences from each other are seen to be less than the differences between them and all other stimuli. Thus, for example, while an administrator and a secretary can be seen to represent different professional groups within the organization, they are more likely to see themselves as sharing a higher level social identity as office staff if they meet in a context that includes people who are not office staff (customers, say). This is because here the differences between them are likely to be seen as small relative to those between them and the customers. In this way, self-categorization is a *context-determined* process based on sensitivity to *relative differences*.

Fourth, just as the meta-contrast principle is a partial determinant of *which* categories perceivers use to represent a given stimulus array, so too is it a partial determinant of the *internal structure* of those categories. Following the theorizing of cognitive psychologists (e.g., Barsalou, 1987; Rosch, 1978), categories are assumed to have an internally *graded structure so that some features of a category (e.g., particular behaviors, attributes, or individuals) define it better than others. This means that, while all members of the same category share a certain degree of prototypicality*, they also differ in the extent to which they are perceived to be representative or prototypical of it. All professional footballers may be considered physically fit, but some are perceived to be more fit than others.

More specifically, it follows from the meta-contrast principle that any particular category member can be seen as more or less prototypical of the category, depending on which other categories are salient in a given context, and how he or she compares with the members of these other categories. That is, a category member will seem more prototypical of his or her category as he or she differs more clearly from members of other categories. However, which categories need to be differentiated, and which category members most clearly represent these differences depends on the situation and the categories that are relevant to that context. In a comparison with cleaners, a relatively well-qualified secretary may be quite prototypical of the category 'secretary' because that person partly embodies the *difference* between secretaries and cleaners, but in comparison with academics that same person's prototypicality will tend to decrease relative to someone who is more practical and 'hands-on', as this latter dimension embodies the difference between secretaries and academics (Haslam, Oakes, McGarty, Turner, & Onorato, 1995; Hogg, Turner, & David, 1990; Mackie & Cooper, 1984;

McGarty, Turner, Hogg, David, & Wetherell, 1992; van Knippenberg, de Vries, & van Knippenberg, 1990).

Finally, fifth, the salience of a categorization at a particular level of abstraction leads to the accentuation of perceived intra-class similarities and inter-class differences between people as defined by their category membership at the same level. In this way, patterns of accentuation reflect the extent of people's categorical interchangeability. For example, if a woman's social self-category 'doctor' becomes salient, other doctors will be perceived to be more similar to each other (and her) and more different from non-doctors (whose similarity to each other will also be accentuated) on dimensions that are seen to define membership of those categories (e.g., knowledge of medicine).

Social Identity Salience

Although they are quite complex, the above hypotheses can be used to develop an analysis of *social identity salience* (Oakes, 1987; Oakes et al., 1991, 1994; Turner, 1985). As already noted, this specifies the processes that dictate *whether* a person defines themselves in terms of personal or social identity and, when social identity is salient, *which* particular group membership serves to guide behavior (see Figure 2.4). In any given organization, when will employees see and act as individuals, rather than in terms

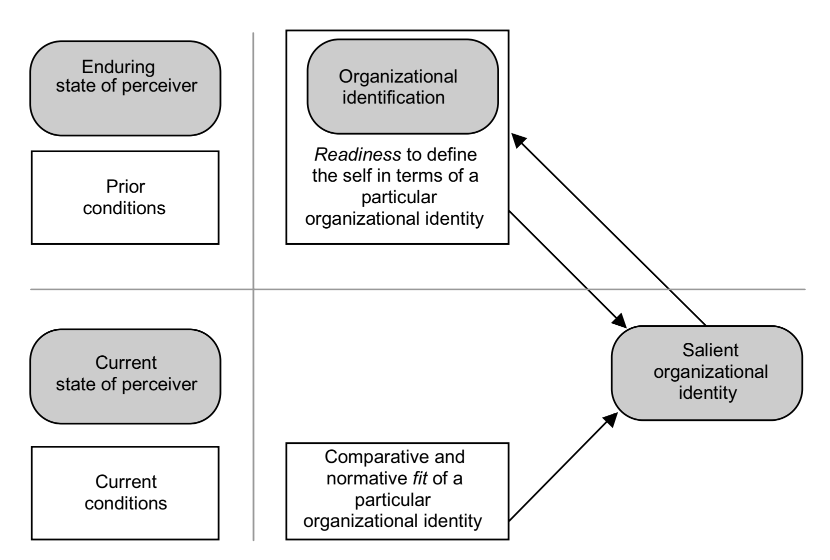


Figure 2.4 The inter-relationship between organizational identification and organizational identity salience.

Reprinted from Haslam, Postmes, & Ellemers (2003), More than a metaphor: Organizational identity makes organizational life possible, *British Journal of Management*, **14**, 364.

of the department or team to which they belong, or in terms of the organization as a whole? Answering this question is extremely important, because the *particular* level at which organizational members define themselves has distinctive implications both for their own behavior and for the functioning of the organization as a whole (Ellemers, de Gilder, & van den Heuvel, 1998; Riketta & van Dick, in press; van Dick, 2004; van Dick, Wagner, Stellmacher, & Christ, 2004, in press; van Knippenberg & van Schie, 2000).

Following the work of Bruner (e.g., 1957), one crucial determinant of social category salience is *fit*. This is the degree to which a social categorization matches subjectively relevant features of reality—so that the category appears to be a sensible way of organizing and making sense of social stimuli (i.e., people and things associated with them). It has two components: comparative and normative.

Comparative fit is defined by the principle of meta-contrast outlined in the previous section. This leads us to expect that a person will define themselves in terms of a particular self-category to the extent that the differences between members of that category on a given dimension of judgement are perceived to be smaller than the differences between members of that category and others that are salient in a particular context. One broad implication of this principle is that people will be more likely to categorize themselves as group members in intergroup rather than intragroup contexts (Haslam, Oakes, Turner, & McGarty, 1995; Turner, 1985). For example, academics employed at different faculties should be more likely to define themselves as university employees in situations where they compete with other universities (e.g., in attracting incoming students) than when they compete internally for the allocation of financial resources among different faculties within the university.

Normative fit arises from the *content* of the match between category specifications and the stimuli being represented. In order to represent sets of people as members of distinct categories, the differences between those sets must not only appear to be larger than the differences within them (comparative fit), but the *nature* of these differences must also be consistent with the perceiver's expectations about the categories (Oakes et al., 1991). For example, workers are more likely to be categorized in terms of their gender when male and female employees hold different attitudes about maternity leave then when there is a difference of opinion about marketing strategies. If these content-related expectations are not met, the social categorization will not be invoked to make sense of events and define the person's own action.

Importantly, too, as Figure 2.4 indicates, principles of fit determine category salience in interaction with *perceiver readiness* (or *accessibility*; Oakes et al., 1994; Turner et al., 1994). Individuals do not come to social encounters with a mind that is a *tabula rasa* and then proceed mechanically to process information in a dispassionate, uninvolved manner in order to decide

whether or not a particular person should be seen as a member of a particular category (see Mowday & Sutton, 1993). Rather, categorization also depends on the perceiver's *prior* expectations, goals, and theories—many of which derive from group memberships and group encounters. People organize and construe the world in ways that reflect the groups to which they belong and in this way their *social histories* lend stability, predictability, and continuity to experience (Barreto, Ellemers, & Palacios, in press; Fiol, 2001; Oakes et al., 1994; Peteraf & Shanley, 1997; Reicher, 1996; Rousseau, 1998; Turner & Giles, 1981).

Identification with a social category—the extent to which the category (e.g., a workteam, a department, an organization) is valued and self-involving, and contributes to an enduring sense of self—is therefore one particularly important factor which affects a person's readiness to use that social category in order to define themselves (e.g., Doosje & Ellemers, 1997; Doosje et al., 1995; Ellemers, Spears, & Doosje, 1997; Fiol, 2001; Kramer, 1993; Rousseau, 1998; Spears, Doosje, & Ellemers, 1997; Turner, 1999). Among other things, when a person identifies strongly with a given organization, he or she will be more prepared to interpret the world, and their own place within it, in a manner consistent with that organization's values, ideology, and culture (Kramer, Brewer, & Hanna, 1996; Mael & Ashforth, 1992; Rousseau, 1998). For this reason, as we document in more detail below (e.g., pp. 64–65, 79–81), identification has proved to be an incredibly useful construct in organizational psychology (Haslam, Postmes et al., 2003).

Social Identity and Social Influence

To complement the ideas reviewed in the previous sections, which are directed to the explanation of psychological processes (e.g., judgement, categorization), we will now address the ongoing consequences of these processes for the *active coordination* of individuals' perception and behavior in social interaction. A key assertion of self-categorization theory in this respect is that social identity serves to regulate individual cognitive activity not only by providing a shared perspective on social reality and a common set of experiences but also by *providing a basis for mutual social influence* (Turner, 1987, 1991). That is, when people perceive themselves to share category membership with another person in a given context they not only *expect to agree* with that person on issues relevant to their shared identity but are also motivated to *strive actively to reach agreement and coordinate their behavior* in relation to those issues. They should attempt to do this by, among other things, identifying shared beliefs, specifying frames of reference, articulating background knowledge, clarifying points of disagreement, and exchanging relevant information.

This is one of the primary functions of key organizational processes such as communication, persuasion, negotiation, and argument (see, e.g., Haslam,

2004; Postmes, 2003). Moreover, as Mayo (1949) acknowledged, it is precisely through individuals' identification of, and conformity to, norms that are perceived to be shared with others in a particular context that their potentially idiosyncratic views become socially organized and consensual. Through this process individual views are coordinated and transformed into *shared* values, beliefs, and behaviors. These values and beliefs have particular force because they are no longer experienced as subjective but instead articulate a common, as-if-objective view (Bar-Tal, 1998; Hardin & Higgins, 1996; Haslam, Turner, Oakes, McGarty, & Reynolds, 1998; Moscovici, 1984). In this way *personal opinion* can become *social fact*. '*I think* it is important to work overtime' can become '*It is* important to work overtime'; '*I think* we are the best' can become '*We are* the best'.

The importance of social influence processes is highlighted in the classic studies by Sherif (1936) and Asch (1951), which clarified the power of ingroups to regulate and structure individual cognitive activity. At the most general level, though, it is apparent that categorization-based processes of influence are central to the transformation of low-level individual inputs (e.g., opinions, attitudes) into higher order group products (e.g., shared norms, organizational culture). In effect, then, these processes provide the all-important psychological conduit between personal perception and organizational behavior. Once again, as we will see below (pp. 84–87), this idea provides an essential platform for significant organizational insights.

SOCIAL IDENTITY CONTROVERSIES

In the above discussion we have tried to outline and contextualize the key ideas that inform social identity work and to clarify both the rationale for those developments and their relationship to alternative approaches from which social identity work is distinguished. This is important because, although researchers who work with social identity concepts usually indicate how their hypotheses are derived from theory, as a rule these empirical accounts do not afford them much scope for elaborating upon the broader theoretical framework from which specific ideas originate. Therefore, especially for those who work on concrete work-related issues or organizational problems, it can be difficult to make sense of the social identity framework and to keep abreast of relevant theoretical developments. As a result, specific ideas tend to be examined at some distance from the theoretical context in which they were developed and can come to be seen as quite detached from the broader perspective in which they make sense.

A number of factors are responsible for this. These include the fact that social identity ideas were developed mainly by social psychologists working outside of the US (most notably in Europe, Canada, and Australia), implying

that they are not only inspired by different societal phenomena, but also that they are informed by a different metatheory from that which characterizes 'mainstream' social and organizational psychology (see Turner & Oakes, 1986, 1997). However, in the context of the recent explosion of interest in this work, the lack of detailed information about the theoretical underpinnings of the social identity approach has contributed to a range of confusions and misunderstandings about the nature of the theory and the contributions that it is—or is not—in a position to make (e.g., see McGarty, 2001; Turner, 1999; Turner & Haslam, 2001). Before we can consider how social-identity-theorizing can further our understanding of problems in industrial and organizational psychology, there is therefore some value in first trying to clarify and resolve these controversies.

Beyond Piecemeal Empiricism

Social identity theory can be characterized as a 'grand theory'. That is, in contrast to theoretical approaches that focus on a particular mechanism or process, or approaches that apply to a specific set of variables, social identity theory tries to capture the dynamic interplay of situational and individual characteristics in order to understand how these might affect a broad range of relevant processes in a variety of social and organizational contexts. Furthermore, many (but not all) researchers working in the social identity tradition have seen their work as providing the opportunity to refine and extend initial formulations of the theory, rather than presenting it as the basis of a novel or alternative perspective. As a result, Tajfel and Turner's (1979) original insights have been considerably elaborated on the basis of empirical knowledge that has accumulated over the last 25 years. While the contributions of Tajfel and Turner (1979, 1986) and of Turner et al. (1987) continue to be regarded as seminal statements of social identity and self-categorization ideas, respectively, efforts have been made to provide periodic updates or further theoretical developments based on this empirical progress (e.g., Oakes et al., 1994; Turner et al., 1994; Turner & Reynolds, 2001).

These efforts to incorporate more complex predictions into a single overarching framework have made it possible to identify important moderating variables that determine which processes are likely to have a bearing on behavior in any given situation. This more sophisticated understanding has made it clear that straightforward one-to-one predictions—e.g., that similarity enhances group commitment and thereby improves group performance (Chattopadhyay, 1999; Polzer et al., 2002)—do not capture the essence of the complex processes to which key variables relate. These complexities also need to be taken on board in order to provide appropriate advice about how to optimize work processes and organizational performance. For example, whether intragroup similarity facilitates or inhibits commitment

and group performance depends on contextual expectations and task characteristics that require group members to be similar or different (van Knippenberg & Haslam, 2003; Rink & Ellemers, 2003).

At the same time, the specific questions that industrial and organizational psychologists are confronted with are typically phrased in a way that invites a conceptualization in relatively limited terms [for example: 'Will an emphasis on the success of an organization facilitate recruitment?' (e.g., Turban & Greening, 1997)]. In turn, such narrow conceptualizations may cause them to overlook additional important consequences [for example: 'Yes, but it may reduce motivation to further improve organizational performance' (e.g., Ouwerkerk, Ellemers, & De Gilder, 1999)].

Against this, one may argue that some questions *are* relatively straightforward, and that it is not necessary to raise additional issues when these appear to be irrelevant. The consideration of isolated variables as possible predictors of important outcomes (e.g., the inclusion of identification in a regression analysis aiming to predict differences in productivity) can often produce powerful results. However, a danger of this approach is that it invites researchers to catalog main effects rather than to examine the interactions that reveal how different variables can moderate each other's influence. And without the overarching grand theory to connect separate effects, these findings often prove hard to reconcile, and in fact may seem to be fundamentally incompatible (see Pfeffer, 1997). This is true, for example, of productivity research, which shows that social identity can contribute both to an increase in output and to a reduction (Ellemers, De Gilder, & Haslam, 2004), and of research on stress, which shows that social support can increase stress or reduce it (Haslam, 2004).

However, when it is *truly* the case that research aims to understand single relations between isolated variables, the focus on specific predictions is not necessarily problematic. Indeed, it may not even make sense to consider more complex or conditional hypotheses when these do not apply to the situation under investigation. It is problematic, though, to assume that the prediction of single relations is all that social identity theory has to offer, and then to criticize it for failing to address more complex issues, or for not being able to account for interactive effects between different predictors (e.g., Jost & Elsbach, 2001; Huddy, 2001; see Turner, 1999 for a more elaborate discussion of this issue). On this basis, researchers have sometimes packaged as novel ideas some that in fact are largely restatements of pre-existing predictions. In the interests of theoretical parsimony, we consider this undesirable (cf. Aronson, 1997).

In sum, we argue that it is important to consider social identity as a grand theory, but not because we feel it should always be addressed in its full complexity or because the theory has some special 'sovereignty' (Turner & Reynolds, 2001). Rather, this is because such a stance allows researchers (a) to assess properly the situations in which it can provide an explanatory

framework for understanding processes in which they are interested and (b) to provide a fair judgement of the ways in which it falls short of this aim or requires further elaboration.

Beyond Individual Difference

In industrial and organizational psychology, there is a long tradition (dating back to Münsterberg, 1913) of construing the psychological dimensions of behavior in terms of people's individual character. This would appear to make sense on a practical level, when the aim is to inform personnel selection and development, and at a more scientific level it is often seen as offering a useful approach to studies that aim to maximize the amount of variance that can be accounted for in seeking to explain critical outcomes. This fits within a more general tendency to assess the ways in which individual dispositions interact with organizational requirements—a tendency reflected in the popularity of contingency approaches to leadership, negotiation, motivation, and so on.

Accordingly, the research tradition that has developed in I/O psychology dictates that researchers who introduce a novel theoretical construct first assume the burden of showing (a) that the new concept can be measured reliably, (b) that it can be meaningfully distinguished from other related constructs, and (c) that it can explain additional variance in important outcome variables above and beyond these other constructs. As a result, considerable research effort and debate focuses on these conceptual and measurement issues before further theoretical or empirical questions come into play. This is reflected in the initial work on social identity which aimed to assess, first, whether organizational identification was different from job involvement, loyalty, or commitment (e.g., Ashforth & Mael, 1989; Gautam, van Dick, & Wagner, in press; Mael & Ashforth, 1992; Mael & Tetrick, 1992; Meyer & Allen, 1997; Pratt, 1998) and, second, whether it might predict a variety of behavioral outcomes—from absenteeism and turnover to discretionary efforts and compliance with organizational norms—better than other candidate variables (e.g., Ouwerkerk et al., 1999; Riketta, 2005). This has clearly been a useful way of introducing the construct of organizational identity into the literature, and of demonstrating its relevance for the understanding of individual behavior in organizations.

However, the mere fact that social identification (one determinant of social identity salience; see Figure 2.4) can be measured using standard techniques (self-report scales) does not mean that it should be treated *as if it were* an individual difference. Doing this creates a range of problems. Most notably, it promotes a psychologized version of the theory that treats the structure of the self as fixed and static—which it is not (Onorato & Turner, 2004)—and it draws attention away from the structural and contextual dynamics that shape those psychological processes and which in turn encourage or inhibit a

conception of self as a member of a larger collective (e.g., a workteam or organization).

To conceptualize social identification as an individual difference variable fails singularly to capture the essence of the social identity approach. When treated in this way, the approach proves to have no more explanatory power than other individual difference approaches which are limited precisely because they incorporate a partial model of self and fail to appreciate the dynamic interplay of self and context (Turner & Onorato, 1999). In fact, the theory argues explicitly against this view. Among other things, this is because it maintains that social identity concerns *transform individual differences into group similarities* (a similar point has also been made by Mayo, 1949).

Furthermore, conceiving of organizational identification as a relatively stable individual difference variable discourages the consideration of more process-oriented questions about the dynamics of identification. These are not only theoretically challenging, but also highly relevant from a practical point of view. For instance, managers who have to deal with people who are already employed by their organization may be less interested in selection issues than in the question of how they can *promote* identification with a given organization or organizational entity, and will wonder whether identification is likely to suffer from the decisions they take (e.g., in the context of organizational development), and, if so, to consider how they might prevent this.

A related concern is that, in practice, people belong to several different groups at the same time, with the result that they have multiple possible identities (Ashforth, 2001a; Ellemers et al., 1998). In a work context, for instance, the same individual can be seen, and see him/herself, as part of the organization (e.g., a Ford employee), as a member of a particular professional group (e.g., a metal worker), or as a member of a particular ethnic group (e.g., a Mexican immigrant; Ellemers et al., 2004; van Dick, Wagner, Stellmacher, & Christ, in press). In a strategic management context, Hodgkinson and Johnson (1994) have discussed how the mental models held by managers concerning the definition of their business competitors are influenced by multiple sources of identity, including national, organizational, functional group, and professional influences (see also Hodgkinson & Sparrow, 2002). So, merely to establish that a person has a strong or weak sense of organizational identity is not necessarily very informative if we do not know how this compares with, and relates to, other potentially competing identities (e.g., Eggins, Reynolds, & Haslam, 2003; Hornsey & Hogg, 1999; Huo, Smith, Tyler, & Lind, 1996). The significance of this point is elaborated below (pp. 70–71). Due to contextual variations that affect the relative fit and salience of the different groups or entities that one can identify with, the same individual can show either high or low levels of organizational identification over time and across situations, depending on the extent to

which relevant situational features speak to that part of the self that is associated with the organization (cf. Hodgkinson & Sparrow, 2002).

Moreover, even in contexts where the organization is clearly relevant to employees' self-definitions, it is not self-evident that the extent to which they identify with the organization is the most appropriate predictor of displays of loyalty or of work behavior that benefits the organization. That is, psychological ties between the organization and the self can focus on different aspects or constituencies within the organization and, hence, may result in behavior that is either beneficial or harmful for the organization, depending on the norms and goals of that constituency and how these relate to the norms and goals of the organization as a whole. For instance, workers who strongly identify with particular organizational values or practices are likely to resist forms of organizational development that aim to adapt those values and/or alter those practices (Ellemers, 2003). In a similar vein, when employees identify with the organization through the ties with their workteam, this may lead them to compensate for or hide any errors made by their colleagues, instead of addressing these deficiencies and trying to improve them—while the latter would arguably be more desirable from an organizational point of view (Ellemers et al., 1998; see also Christ, van Dick, Wagner, & Stellmacher, 2003; Riketta & van Dick, in press; van Dick, 2004; van Knippenberg & van Schie, 2000). This again illustrates that it only makes sense to treat organizational identification as a variable of interest when aiming to predict behavior that relates to people's organizational identities (e.g., organizational turnover). For researchers or managers who are interested in other forms of behavior (e.g., helping team members, continued professional education, participation in anti-discrimination activities), knowledge of a person's level of organizational identification would be of limited utility. In these cases, they would be better advised to examine the specific identities that underpin specific organizational activities (in these examples, perhaps by looking at whether people identify with their workteam, with their professional group, or with those who share the same ethnic background).

To summarize, although we will elaborate below (pp. 64–65, 79–81) on the reasons researchers and managers might wish to assess the extent to which workers identify with their organization, we maintain that treating social and organizational identification as *individual difference* variables limits their practical usefulness and does not do justice to the nature of the identification construct as conceptualized within the social identity approach. First, this is because a more theoretically interesting and practically relevant challenge is to examine the ways in which people are encouraged to increase or reduce their identification with the organization rather than simply to assess (and reify) a particular person's level of identification. Second, an individual difference approach seems inappropriate because it overlooks changes in levels of identification across situations and over time (i.e., the fact that

identification is a dependent, rather than an independent variable; Doosje et al., 2002), and draws attention away from the psychological process and contextual factors responsible for this fluctuation. Finally, third, focusing on individual differences in organizational identification can be misleading when one's aim is to understand or predict behavior that is guided by identification with other organizational constituencies. This is particularly important when these constituencies have norms, values, and goals that do not directly map on to the norms or goals of the organization as a whole.

Beyond Ingroup Bias

As we intimated above, it is not unusual for textbooks and secondary accounts of social identity theory to present the empirical fact of intergroup discrimination (and the neat demonstration of this in the minimal group studies) as the theory's core idea. Illustrative of this tendency, Jost and Elsbach (2001, p. 182) present a critique of 'the main applications of social identity theory to organizational contexts' in which they question what they see as three of the theory's main assumptions. They summarize these assumptions as follows:

(a) the assumption that ingroup bias is a general or default motive or strategy;
(b) the assumption that low-status group members compensate for identity threats by increasing levels of ingroup bias; and
(c) the assumption that people prefer to interact with members of their own groups than with members of other groups.

These assumptions are said to be derived from the writings of 'some very prominent interpreters' (Jost & Elsbach, 2001, p. 183), although it is notable that these do not include the actual proponents of the theory (i.e., Tajfel or Turner). Criticism of these assumptions is then backed up by a review of research which demonstrates, among other things, (a) that groups (particularly low-status ones) often display outgroup favoritism (e.g., Ellemers et al., 1993; Mummendey & Schreiber, 1983; Spears & Manstead, 1989), (b) that members of high-status groups often display more ingroup bias than members of low-status groups (particularly in organizational contexts; e.g., Baron & Pfeffer, 1994), and (c) that homophily (liking or attraction to ingroup members) is more marked in the behavior of high-status than low-status groups (e.g., Tsui, Pearce, Porter, & Hite, 1995).

Elaborating on this evidence, Jost and Elsbach (2001) go on to present an alternative *system justification theory* of group behavior in organizations. A core argument of this theory is that members of low-status groups often find it extremely difficult to challenge the established hierarchy of social relations and, hence, their behavior often tends tacitly to accept and reproduce that hierarchy rather than to challenge it. One consequence of this is that

members of low-status groups often experience conflict with their identity-related motivations (e.g., to self-enhance, to have positive self-regard) in a way that high-status group members do not. One example Jost and Elsbach cite in this regard concerns women who come to see their low pay relative to men as a deserved and a valid reflection of inferior ability, even when men do not (e.g., see Major, 1994).

There is much in Jost and Elsbach's (2001) contribution that is valuable and timely. Particularly welcome is their attention to the complex reactions of low-status group members, and to the distinctly negative outcomes (e.g., for well-being) associated with membership in such groups. Nevertheless, as a critique of social identity theory, their arguments are puzzling. In the first instance, this is because, as we have been at pains to stress, there is no sense in which the three assumptions presented by Jost and Elsbach are contained within (or even compatible with) social identity theory. Reacting to similar claims by other researchers (e.g., Hinkle & Brown, 1990; Sidanius & Pratto, 1999, pp. 19–20), Turner (1999, pp. 20–21) thus comments:

> Social identity theory never advanced the hypothesis of a direct causal connection between ingroup identification and ingroup bias. . . . It always assumed that whether or not ingroup bias was observed was a function of the specific intergroup comparison being made and the interaction between the relative status position of the ingroup, the perceived impermeability of group boundaries and the nature of the perceived differences on the relevant dimension.

Along similar lines, Tajfel and Turner's (1979) original analysis also makes it clear why compensatory bias (in response to ingroup threat) and homophily will vary as a function of these same factors. For example, the idea that, when status relations are perceived to be stable and legitimate, members of low-status groups will adopt strategies of social creativity that reinforce the status quo, is clearly at odds with any suggestion that ingroup favoritism and homophily are inevitable. Moreover, this idea is also consistent with much of the evidence for system justification that Jost and Elsbach discuss. In short, in those contexts where it is manifest, evidence of system justification appears to support social identity theory rather than to undermine it (see also Tajfel, 1984).

In this respect it is interesting to note that findings very similar to those that Jost and Elsbach (2001) discuss have actually been presented by other researchers as evidence that is suggested by and *supports* social identity theory. This is true, for example, of work showing (a) that women find discrimination against women more threatening, offensive, and harmful than men find discrimination against men (Branscombe, 1998; Schmitt & Branscombe, 2002a; Schmitt, Branscombe, Kobrynowicz, & Owen, 2002) and (b) that women's reactions to sexism depend on social–structural and

motivational factors (Fajak & Haslam, 1998; Schmitt, Branscombe, & Postmes, 2003).

Further research also provides evidence of a number of other behavioral nuances that are consistent with social identity and self-categorization principles. For example, research by Mummendey and colleagues has shown that group members are less likely to display ingroup favoritism when they are awarding penalties rather than rewards—a finding which Reynolds et al. (2000; Turner & Reynolds, 2001) explain in terms of self-categorization theory's principles of comparative and normative fit. Research in hospitals and scientific organizations by Terry and her colleagues examining the reactions of high- and low-status groups to organizational mergers has also found that employees of the high-status group typically show ingroup favoritism when evaluating the two groups on status-relevant dimensions, but that they display outgroup favoritism on status-irrelevant dimensions (Terry & Callan, 1998; see also Terry et al., 2001; Terry & O'Brien, 2001; for an overview see Terry, 2003). As a corollary, members of the low-status group are more likely to acknowledge the inferiority of the ingroup on status-relevant dimensions, but to accentuate their superiority on the status-irrelevant ones. These patterns are understood by the authors to be highly consistent with social identity theory's predictions concerning the dimensions on which high- and low-status groups are likely to display ingroup *and* outgroup favoritism, depending on the stability of intergroup differences and the reality constraints these represent (see also Ellemers, van Rijswijk et al., 1997).

Along related lines, early field studies by Stephenson and Brotherton (1973, 1975) also found that the level of discrimination between coal mine employees was not constant across groups but depended on the level of pre-existing disagreement between groups as well as their relative size (see also Sachdev & Bourhis, 1984). In a slightly different vein, research has also shown that people's willingness to display ingroup favoritism is constrained by *audience* factors. In interaction with group status, *surveillance* from ingroup and outgroup members is thus a critical moderator of acts that favor the ingroup and disadvantage the outgroup (Ellemers, van Dyck, Hinkle, & Jacobs, 2000). Among other things, this means that individuals are less likely to discriminate against an ingroup or an outgroup to the extent that their behavior is monitored by members of those groups, although this itself depends on the status of those groups, the positions of individuals within them, and the security of intergroup relations (Barreto & Ellemers, 2001; Ellemers, Barreto, & Spears, 1999; Haslam & Reicher, 2002; Jetten et al., 2004; Noel, Wann, & Branscombe, 1995; Reicher & Levine, 1994).

Taken together, the above data scotch any suggestion that when a given social identity is salient, motivations to enhance the ingroup will always play themselves out in displays of ingroup favoritism. Again, not only does social identity theory never predict that they would, it clearly predicts the opposite. Paradoxically, though, the fact that many commentators remain blind to this

fact can be attributed partly to the success of the original minimal group studies, and partly to other factors including tendencies toward individualism and psychologization (Turner & Reynolds, 2001). Again, this is because secondary accounts of these studies often lead researchers to believe that the core message of social identity theory is that, when in groups, people automatically evince ingroup favoritism and prejudice (Turner & Oakes, 1997). Ironically, then, such interpretations of the theory lead people away from an analysis of content and context, whereas a proper appreciation of the theory's reasoning should actually turn them *toward* it (Turner, 1999, pp. 33–34; Turner & Reynolds, 2001, p. 149; see also Lalonde, 2002, p. 627).

Beyond Interdependence, Exchange, and Personal Self-interest

We noted above that one of the main reasons why the minimal group studies had such dramatic impact when they were published was that they challenged established models of group behavior which argued that intergroup discrimination was contingent upon (a) ties of interdependence between group members (Homans, 1951; Lott & Lott, 1965; Rabbie, Schot, & Visser, 1989), (b) principles of reciprocal exchange (e.g., Adams, 1965; Blau, 1964; Walster, Walster, & Berscheid, 1978), or (c) quasi-economic assessments of the pros and cons of particular courses of action and the instrumental pursuit of one's personal self-interest (Thibaut & Kelley, 1959). In a situation that is characterized by an almost Kafkaesque emptiness, individuals reliably award more points to an unknown member of an arbitrary ingroup with whom there has been no history of interaction, with whom there is no prospect of future interaction, and where there is no potential for this to impact upon their personal losses or gains. Moreover, since the minimal group studies were carried out, a large body of research has tested the social-identity-based explanations of Tajfel et al.'s (1971) findings against those based on other factors (e.g., cultural norms, demand characteristics, assumed similarity, expected reciprocity). This research has lent consistent support to Tajfel and Turner's conclusions (see, e.g., Bourhis, Turner, & Gagnon, 1997; Diehl, 1990; Turner & Bourhis, 1996).

Nevertheless, within organizational psychology, models which argue for the primacy of individual self-interest and interdependence as motivators of group behavior still prevail. For example, influential models of (a) organizational citizenship behavior (Organ, 1988), (b) cooperation (Komorita & Parks, 1994), (c) leadership (Chemers, 1987; Hollander, 1995), (d) stakeholder mobilization (Frooman, 1999; Savage, Nix, Whitehead, & Blair, 1991), (e) turnover (Rusbult & van Lange, 1996), and (f) industrial action (Klandermans, 1984) are all founded upon principles of rational choice which suggest that individuals choose particular paths of organizational action (e.g., to work unpaid overtime, to help others, to follow directives, to lobby a board

of directors, to leave a job, or to go on strike) based on the prospect of these paths proving beneficial rather than costly for the individual self.

However, in the past decade or so, scholars have started pointing out the limits of rational choice models to explain behavior in organizations (e.g., Hodgkinson & Sparrow, 2002), and a range of research programs has competitively tested these arguments against alternative social-identity-based models (e.g., Abrams, Ando, & Hinkle, 1998; Kelly, 1993; Jetten, O'Brien, & Trindall, 2002; Tyler & Blader, 2000; for related commentary see Akerlof & Kranton, 2000; Rowley & Moldoveanu, 2003; and Schrager, 1985). Each of these tests provides compelling support for two conclusions. First, they indicate that identity-based concerns can be conceptually and practically *distinguished* from interest-based concerns. Thus, while both may independently influence the way people behave toward each other, there is no sense in which concerns to enhance social identity are *reducible* to a desire to enhance personal gain. Second, studies that directly compare the two effects all provide evidence that identity-based concerns are a *superior* predictor of organizational choices and actions than interest-based analyses.

As an example of these points, research by Kelly and Kelly (1994) has shown that social identification with a union was a much better predictor of willingness to engage in industrial action than perceptions of personal or collective injustice (see also Kelly & Breinlinger, 1996; Veenstra & Haslam, 2000). Reflecting on such data, Klandermans (1997)—who had previously advocated a rational choice approach—conceded that his model's assumptions were incomplete and needed to incorporate social-identity-related concerns to increase its predictive power (see also Simon & Klandermans, 2001). Similarly, Kelly and Breinlinger (1996) argue that assumptions of rationality are especially strained in cases of protracted industrial disputes. In these situations, union members often bear the financial and social burden of extreme hardship and are usually all too well aware of the fact that personal benefits, if gained at all, may be slight. For an individual, the 'rational' action would appear to be to leave (or not join) the union, let others do the protesting, and then reap the benefits of any successes they achieve (e.g., in the form of a pay rise or better working conditions). Likewise, Rowley and Moldoveanu (2003) note that interest-based models of stakeholder protest would lead one to predict (a) that in many situations individuals would not protest when they in fact do (e.g., at a shareholders' meeting, where they have a trivial proportion of the votes) and (b) that on even more occasions individuals would protest when they in fact do not (e.g., when their personal livelihood is threatened by a company's pollution policy).

In one of the most extensive programs of research to date, Tyler and Blader (2000) explicitly compared the ability of interest-based and identity-based factors to predict a range of cooperative behaviors in organizations, such as compliance and extra-role behavior (see also Smith, Tyler, & Huo, 2003; Tyler, 1999). Their findings indicated that, when considered alone, inter-

est-based factors (e.g., resources obtained, possible sanctions, and incentives) combined to predict a reliable but small proportion of such behavior (around 10%) but that when their predictive capacity was assessed alongside social-identity-based factors (e.g., pride, respect, trust) the contribution of interest-based factors to the explanation of extra-role behavior reduced dramatically (to around 0.6%) and was substantially lower than that of social-identity-based factors (which was around 16%). On the basis of this and other similar evidence, Tyler and Blader (2000) argue that, to the extent that such economic concerns are important to employees, it is primarily because they serve identity-based functions—for example, by connoting pride, status, and respect (a conclusion also supported by analysis of the work behavior of casual workers; Veenstra, Haslam, & Reynolds, 2004).

In sum, then, it appears that while costs, benefits, prospects, exchange, and so forth are all important *features* of group and organizational life, these features are not necessarily the prime movers that they are commonly supposed to be. In part, this is because what 'counts' as a cost, a benefit, a fair exchange, a valued resource, or even self-interest, cannot be established independently of the contextualized social identities which give these constructs meaning. When making judgements of costs, benefits, and so on, people's social identities thus determine (among other things) what the relevant entities to be compared are, which frame of reference should be used to interpret differential outcomes, and what signifies a self-relevant cost or benefit (Platow, O'Connell, Shave, & Hanning, 1995; Platow, Reid, & Andrew, 1998). More generally, though, such calculus is of secondary importance because—unlike the psycho-structural processes that give rise to social identity—an abstracted appreciation of costs and benefits is of little use in helping individuals to deal appropriately with the complex and variable exigencies of group and organizational life that they routinely confront.

Beyond Metaphor

The controversies discussed in the previous four sections have formed a backdrop to much of the last 20 or so years of social and organizational research that has been informed by a social identity perspective. In contrast, this section deals with a debate that has arisen much more recently and which has thus far been confined specifically to the topic of organizational identity. This debate has been spearheaded by Cornelissen (2002a, b) and questions the heuristic status of organizational identity *as a metaphor* for understanding organizational life. In other words, the critique reflects upon and challenges the idea that organizational identity might provide a useful way of conceptualizing organizations, as it posits that social identity is merely used as a figure of speech.

Cornelissen's first contention is that the metaphor of organizational identity has been accepted uncritically and that, on closer inspection, its

credentials are rather suspect. His second argument is that when researchers work with the metaphor they run into the 'logical impasse' that arises from the dissimilarity 'between the individual-level construct of identity and the collective-level construct of organization' (Cornelissen, 2002a, pp. 264, 266). From a sociological perspective, Gioia, Schultz, & Corley (2002a, b) mount a spirited defence of organizational identity as an analytic construct. Far from being barren and stale, they argue that it is proving extremely useful—not least because it is 'part of the lay organizational vocabulary' (Gioia et al., 2002a, p. 270) that organizational members themselves use to describe both their own experience and features of the organizational world around them. In response to Cornelissen's (2002a) second point, they note that there is no necessary equivalence between individual and collective identity and that, on the contrary, researchers have begun to identify ways in which the structure and content of these is markedly different (e.g., Gioia, 1998; Weick & Roberts, 1993).

Yet, going beyond this sociological response, a *social psychological* perspective suggests that organizational identity is more than just a metaphor (Haslam, Postmes et al., 2003). Psychologically, then, there is considerable value in using the term in a non-metaphorical way to refer to psychological and social *realities*—realities associated with the construct's status as an organizational motivator and product (e.g., see pp. 68–72 below). And, while there is a qualitative difference between individual (personal) identity and organizational identity, there is also much to be gained from attempts to spell out *the psychological basis of this difference* along the lines of Tajfel's (1978) and Turner's (1982) treatments (see Figure 2.2). When one does investigate the psychology of this difference, the construct of organizational identity can be seen to be valuable *precisely because* it allows researchers to resolve the problem identified by Cornelissen (2002a) concerning the impasse between individual and collective levels of analysis (Turner & Oakes, 1986). Entering into this analysis also allows us to understand the distinct *consequences* of the discontinuity between personal and social (organizational) identity.

Thus, along the lines of Turner's (1982) analysis, we can see that organizational identity relates to stereotypic attributes of an organization that are conferred upon it by those for whom the organization is relevant and meaningful. Thinking about organizational identities *as stereotypes* is helpful for a range of reasons, not least because it allows us to draw on the large body of research that pertains to this topic (e.g., in social psychology; McGarty, Yzerbyt, & Spears, 2002; Oakes et al., 1994; Spears, Oakes, Ellemers, & Haslam, 1997). Three features of stereotypes that are particularly relevant to the present chapter are, first, that they are widely shared within particular social groups and communities (Haslam, Turner, Oakes, Reynolds et al., 1998; Tajfel, 1981a, b); second, that they provide a basis for socially coordinated action (Reicher, 1982; Sherif, 1966); and, third, that while they are

often characterized by stability over time they are also context-dependent and potentially fluid (Haslam & Turner, 1992).

In relation to the second of these points, a significant feature of organizational identities, as with stereotypes, is that they are used not only to describe others but also to describe ourselves and to inform our own behavior. In this sense, organizational identity overlaps with conceptualizations of organizational culture (see also Albert & Whetten, 1985; Ellemers, 2003; Gioia, Schultz, & Corley, 2000) in serving as a potential source of norms and values that guide people's behavior toward both ingroup and outgroup members. However, in addition to offering scope to define the *content* of what we are, organizational (or social) identification also captures the extent to which people define themselves as members of a particular organization (or group). That is, identity *strength* (organizational/social identification) indicates whether people engage in a process of *self-stereotyping* whereby their behavior is oriented toward, and structured by, the content of that organization's (or group's) defining characteristics, norms, and values, resulting in the internalization of a particular organizational (or social) identity.

Critically, too, once a particular organizational identity has become salient for a particular group of people and once particular norms and values have come to define it, this should impact not just on the psychology of individuals but it should also help to translate that psychology into collective products—plans and visions, goods and services, organizations and institutions. As noted above, this is because, as a form of social identity, shared organizational identity is a basis not only for people to perceive and interpret their world in similar ways, but also for processes of social influence which allow them to coordinate their behavior in ways that lead to concerted social action and collective products (Haslam, 2001; Reicher & Hopkins, 1996; Simon & Klandermans, 2001; Turner, 1991).

In exactly this way, shared organizational identity can be seen to be the basis for forms of 'collective mind' akin to those observed in Weick and Roberts's influential research into the interrelated activities of flight deck crews (1993). Ultimately, the power and utility of organizational identity as an analytic construct—like that of social identity more generally—derives from the fact that it is an embodiment of the dialectical relationship between socially structured individual psychology, on the one hand, and collective organizational products, on the other. Recognizing that individual psychology is socially mediated means that psychological analysis need not be reductionistic in the way that Cornelissen (2002a) implies. At the same time, the fact that collective products are always underpinned and made possible by individual psychology means that organizational analysis does not have to avoid psychology in order to be valid.

In conclusion, then, it is correct to assert that, as metaphors, social and organizational identity have limited value. But it is wrong to conclude that this is all they are or can be. The primary value and force of all forms of social

identity (organizational, departmental, team-based, and so on) arises from the fact that they are psychologically and socially *real*. Membership in groups and organizations shapes our sense of who we are, and our sense of who we are (and who we are not) is the foundation for the structures and achievements of the social and organizational world. Accordingly, social identity should be understood and investigated primarily as a fact of social and organizational life rather than as a figure of speech (Haslam, Postmes et al., 2003).

SOCIAL IDENTITY CONTRIBUTIONS

Social Identity as a Contextual Product

One of the key differences between an identity-based definition of the group and more traditional sociological definitions is that in the former case the group itself—together with the strength and nature of individuals' attachment to it—is assumed to be context-dependent rather than in any sense given (e.g., demographically). For example, whether and how a woman acts in terms of a gender-defined identity in an organization depends not simply on her possession of 'objective' physical, psychological, or behavioral characteristics but also on how that social category is comparatively and normatively defined, whether it has prior meaning, and on the individual's perceived prototypicality in relation to a particular category definition. Being 'a woman' is thus likely to mean something different in a 'traditional' organization where women typically occupy junior positions and struggle to gain promotion, and where feminism is frowned upon, than it does in a more progressive organization (Ellemers, van den Heuvel, de Gilder, Maass, & Bonvini, 2004; Fajak & Haslam, 1998; Fiske, Bersoff, Borgida, Deaux, & Heilman, 1991; Schmitt, Ellemers, & Branscombe, 2003).

For example, it follows from social identity theory that in the traditional organization women are more likely to embrace strategies of social creativity which lead them to self-enhance by defining themselves positively on non-status-defining attributes (e.g., sociability, compliance) than to pursue strategies of social change which bring them into competition with men on status-defining dimensions (e.g., for pay). It also follows from self-categorization theory that in the traditional organization women who do compete with men (or who pursue strategies of personal mobility) would tend to be relatively aprototypical and, hence, should be likely (a) to be seen as less 'womanly' (Hopkins, 1996), (b) to receive less support from other women, and (c) to have less influence over them (Ellemers, van den Heuvel et al., 2004).

Following on from this point, it can be seen that there are no inherent, stable definitions of social categories (whether ingroups or outgroups) and no predefined, universal identities in terms of which a person will define themselves. This point is discussed by Wharton (1992) in an extended treatment

of the way in which employees' self-definition in terms of gender and 'race' can change across different workplace settings (see also Gioia et al., 2000; Jackson, 1992; Ridgeway, 1991). Related evidence also emerges from programmatic work conducted by Levine and his colleagues which shows how social context can change the meaning of specific events for particular social identities. This work relates to issues of stress and health (for a discussion see Haslam, 2004) and shows how contextual changes in identity definition impact upon the perceived severity of particular stressors and symptoms. In an illustrative study, Levine (1999) presented female office secretaries with scenarios in which a particular constellation of symptoms was described. Pre-testing had established that some of the symptoms were particularly relevant to a secretarial identity because they impacted on secretarial work (restricted manual dexterity, back pain, flu), and some were particularly relevant to a gender identity because they affected physical appearance (a scar on the face, a broken nose). The participants' task was to rate how distressing they would find each of these scenarios and how much each would adversely affect their lives. Significantly, though, before doing this, gender was made salient for half of the participants by telling them that the researchers were interested in comparing the responses of men and women, while the other half had their secretarial identity made salient by telling them that the researchers were interested in the responses of different professional groups. As predicted, the extent to which particular symptoms were seen as a cause for concern depended on the extent that they were threatening to the particular social identity that the experimenter had made salient. So, for example, when their identity as secretaries was salient, women saw symptoms relevant to gender identity as reasonably trivial. However, when their gender was salient, women perceived these same scenarios to be much more distressing, but saw symptoms related to secretarial work as more trivial.

Levine (1999) developed these arguments by elaborating upon the context-sensitivity of the self-categorization processes at work in symptom appraisal. In a subsequent study, male rugby players evaluated the seriousness of a range of illness scenarios under conditions where their identity as males was made salient. However, the contextual definition of this identity was varied by indicating that responses were being compared with those of either women or 'new-age' men. Levine (1999) reasoned that the rugby players' understanding of what it means to be male—and hence what constitutes a male-related stressor—would vary in these two contexts. In particular, he predicted that when they were compared with new-age men, the rugby players would perceive their 'traditional' male identity to be under threat and that, in order to re-establish a distinct identity, they would here be particularly keen to emphasize their own masculinity by downplaying the seriousness of emotional threats (a violent temper, depression) and threats to physical attractiveness (a facial scar, a burn on the hand). The results confirmed these predictions. In this, the findings suggest not only that salient

group memberships provide a basis for assessing the significance of particular events but that this assessment also depends on features of social context which imbue those group memberships with a particular meaning. When thinking of themselves in terms of social identity, people interpret the world (e.g., the capacity of events to threaten the self) in relation to that identity, but in line with general self-categorization principles (e.g., Haslam & Turner, 1992; Turner, 1985), the nature of that identity itself depends on features of comparative and normative context.

Some more recent organizational work that is consistent with these arguments is reported by Van Dick and colleagues (Van Dick et al., in press). In this, schoolteachers' identification with different entities (their current school, their profession, their own career) together with their willingness to engage in acts of organizational citizenship on behalf of their school was assessed in a range of conditions in which these different identities were made salient by means of manipulations of comparative fit. A teacher's school identity was made salient by indicating that the researchers were comparing the organizational citizenship of teachers between schools; a teacher's professional identity was made salient by indicating that they were comparing the responses of teachers with kindergarden educators; personal identity was made salient by indicating that the study was looking at individual differences between teachers. As predicted, these manipulations led to changes in the extent to which the teachers defined themselves in terms of a specific social identity and also affected their willingness to engage in school-based organizational citizenship. School identification was highest in a comparative context in which schools were compared and statistical analysis also confirmed that increases in citizenship were mediated by contextually induced increases in the salience of school identity.

Along similar lines, research by Haslam, Powell, and Turner (2000) has also shown that changes to normative context impact on employees' levels of organizational identification and affect their willingness to engage in citizenship acts on behalf of that organization. In this research, staff in a geological institute completed a questionnaire which either did or did not refer to the high status and achievements of that organization. This manipulation was intended to increase the normative fit of organizational identity and, hence, to increase willingness to act in the interests of that organization. These predictions were confirmed and accord with similar findings reported by Tyler and his colleagues (e.g., Tyler, 1999) in which an increased capacity to feel pride in an organization translates into higher organizational identification and enhanced citizenship.

Whether or not people internalize and act in terms of a given social identity thus depends critically on features of normative and comparative context. Moreover, as Levine's work suggests, these same factors also affect the content and meaning of that identity, so that context affects not just how much people identify, but also *what they are identifying with*. Along these lines,

research by Doosje, Haslam, Spears, Oakes, and Koomen (1998) has shown that psychologists define themselves very differently when they compare themselves with physicists rather than with dramatists, or within a science rather than an arts community (Spears, Doosje et al., 1997). In comparison with dramatists, they see themselves as more scientific; in comparison with physicists, they see themselves as more artistic (Van Rijswijk, Haslam, & Ellemers, in press).

This point has clear relevance for the conceptualization of *organizational culture* and of the way in which this informs employees' behavior. Traditionally, culture has tended to be understood as representing relatively stable work-related values (Hofstede, 1980; Schein, 1990) and, hence, to be amenable to relatively objective quantification (e.g., O'Reilly, Chatman, & Caldwell, 1991; Rousseau, 1990). However, principles of self-categorization theory imply that, while history will contribute to patterns of accessibility that give culture an enduring and stable quality, this—like organizational identity itself—should also be potentially fluid and mutable. As contexts change, employees and their organization as a whole should be able to redefine both what they are 'about' and where they are going (see also Ashkanasy & Jackson, 2002; Gioia et al., 2000). This point is confirmed in research conducted by Nauta and Sanders (2001) among Dutch manufacturing companies. Here the stated goals of manufacturing, planning, and marketing departments (together with their employees' perceptions of other departments' goals and of the degree to which different departments were contributing to organizational goals) changed dramatically as a function of changes in the comparative context, which served to redefine the meaning of employees' salient social identities. For example, employees in the planning department perceived their goals to be closer to those of the manufacturing department (e.g., to be efficient) when comparing themselves with the marketing department, but closer to those of marketing (e.g., to deliver service reliably and quickly) when comparing themselves with manufacturing.

Furthermore, just as context defines content, so too it impacts on the capacity of particular exemplars of a category (e.g., individuals, ideas, goals) to represent, and be perceived to represent, that content (Turner, 1987). This point is most germane to the analysis of *leadership* (e.g., see Duck & Fielding, 1999, 2003; Ellemers, Van den Heuvel et al., in press; Haslam, 2001; Jetten, Duck, Terry, & O'Brien, 2002; Turner & Haslam, 2001; van Knippenberg & Hogg, 2003). Here a large and rapidly expanding body of research has challenged the view that particular individuals are inherently better suited to offices of leadership by virtue of their possession of specific attributes that can be defined and measured independently of context (e.g., charisma; Haslam & Platow, 2001b), or that leadership is determined by a simple matching of specific individuals (or 'leader prototypes'; Lord & Maher, 1991) with specific contexts, as suggested by contingency theories (e.g., after Fiedler, 1964, 1978). Instead, research has

supported the idea, derived from self-categorization theory, that a person's capacity to lead (and to be seen to display leadership) varies with the nature of their followers, as a function of their capacity to represent a contextually defined social identity (Turner, 1991).

Consistent with this view, programmatic research by Platow and colleagues (e.g., Haslam & Platow, 2001a; Platow, Hoar, Reid, Harley, & Morrison, 1997; Platow et al., 1998; Platow & van Knippenberg, 2001) has shown that group members' willingness to support and be influenced by a leader varies as a function of changes to comparative context. In particular, in intragroup contexts group members favor leaders who are distributively fair and treat ingroup members equally, but in intergroup contexts they favor leaders whose behavior (e.g., their treatment of ingroup and outgroup members) helps to differentiate the ingroup positively from the comparison outgroup. Such findings are predicted by both social identity and self-categorization principles as they show that leadership is contingent (a) on a person's capacity to contribute to the positive distinctiveness of a social identity that they share with followers and (b) on their context-determined prototypicality with respect to that identity.

In this and other work, a key contribution of the social identity approach has been to question static, taxonomic approaches which see classification and specification of particular organizational features as the primary path to theoretical and practical understanding. Above all, it does this by revealing the capacity for comparative and normative factors to redefine the nature and meaning both (a) of particular organizational properties and structures, and (b) of individuals' psychological orientations toward them. Furthermore, such redefinition has *qualitative*, not just quantitative, implications. This is because social identities are emergent higher-order products that are *transformed* by context, rather than merely aggregated from it (Turner & Oakes, 1986). This means that relevant psychological states and processes (e.g., leadership, culture, gender) cannot be discovered within the disaggregated parts of wholes in the manner that classical organizational approaches suggest. Rather, these identity-based processes need to be understood, and studied, as irreducibly socio-contextual. Organizational contexts do not merely provide milieus within which social identity operates, they also contribute to the creation of *new* identities, just as those identities themselves motivate the creation of new organizational contexts (Fiol & O'Connor, 2002; Gioia et al., 2000). This dynamic is central to organizational psychology and, moreover, is a basic source of organizational vitality and adaptiveness.

Social Identity as a Strategic Response to Organizational Context

In the previous section we looked at social identity as a contextual product and focused on the *cognitive* bases for identification—examining the factors that lead to a specific work-related identity becoming salient, and showing

that different features of the same social identity can come to define that self-category in different contexts. In this section we will consider more *strategic* considerations that lead people to define themselves as representative (prototypical) of certain social or organizational identities rather than others, and the motivational bases for presenting the content of their social identity in a particular way. The central argument in this section is that, aside from cognitive salience effects, expressions of identity and signs of identification may also stem from people's attempts to actively *negotiate* their identity to fit their preferred self-views (Barreto & Ellemers, 2002, 2003; Ellemers, Spears, & Doosje, 2002).

Organizational research suggests that these *identity management* strategies can also be witnessed in work settings. A key assumption underlying social identity theory—namely, that people prefer to associate the self with those groups that are positively distinct from others—has been applied to work contexts by Dutton et al. (1994). They argue that a successful organization is more attractive for its employees as it is more likely to provide them with a distinctive self-concept that enhances self-esteem. This is supported by research showing that the corporate performance and reputation of a given firm determines its attractiveness for employees (Turban & Greening, 1997). Likewise, a recent study among physicians working with different healthcare systems (Dukerich, Golden, & Shortell, 2002) revealed that these physicians' identification with a particular healthcare system depended on the perceived attractiveness and external image of that system. In turn, identification with a system predicted physicians' displays of cooperative behavior toward it. Thus, the results of these studies consistently indicate that, in work contexts too, the willingness to associate the self with a particular organizational constituency is enhanced the more opportunities it affords for establishing a positive social identity (see also Peteraf & Shanley, 1997).

As we have indicated in our description of the interpersonal–intergroup continuum and its consequences for cognition and behavior, in situations where one's group *cannot* be distinguished positively from others, people try to fulfill the desire to establish a positive social identity in alternative ways. Furthermore, social identity theory posits that the particular strategies people pursue (individual mobility, social creativity, or social change) depend on the structural characteristics of the intergroup situation, such as the permeability of group boundaries, and the security of group status (Ellemers, 1993; Tajfel & Turner, 1979). Thus, the strategic behavior people display in order to cope with a threatened (or less than ideal) social identity is jointly determined by the desire, on the one hand, to associate the self with a subjectively valued group (or to establish the value of a group that already includes the self), and, on the other hand, by situational features that constrain the ways in which the present situation is subject to objective changes or cognitive redefinitions. Together, these desires, perceived possibilities, and restrictions determine whether people will tend to *dissociate* the self

from a particular group (as in social mobility), or *emphasize* their identity as group members by searching for alternative ways to achieve positive distinctiveness for the group (social creativity) or by working together with others to achieve collective identity improvement (social change).

Looking at work-related situations in which people experience some form of threat to positive social identity, there is evidence for the use of all three of the above identity management strategies. *First*, organizational researchers have observed cognitive redefinitions of comparative organizational features that are consistent with social identity notions of *social creativity*. For instance, Elsbach and Kramer (1996) conducted a study among the faculty of eight 'top-20' business schools which examined how these academics responded to rankings that challenged their beliefs about the relative standing of their school. The researchers found that the implied identity threat resulted in the academics selectively focusing on comparative categories (e.g., making regional instead of national comparisons) and dimensions (e.g., level or basis of funding) that would yield the school a favorable identity. Likewise, Ashforth and Kreiner (1999) investigated the ways in which people who do 'dirty work' (e.g., garbage collectors, dog catchers, or exotic dancers) respond to the challenge this poses for their work-based identity. They observed that these workers cope by defining their work along those dimensions that convey a positive rather than a negative image (e.g., having flexible hours, working outdoors, or meeting new people). Thus, use of these social creativity strategies allowed workers to maintain identification with their school or profession, by redefining the implications of this identity. In a similar vein, Lupton (2000) describes how men who do 'women's work' tend to reconstruct the nature of their occupation, to bring it more in line with their gender identity.

Second, there are studies that provide evidence of intergroup competition and attempts at *social change* with respect to work-related outcomes. In these, people identify with groups whose current outcomes they do not find acceptable. For instance, union activity can be seen as a form of social competition which aims to collectively improve employee conditions or other work outcomes (e.g., Veenstra & Haslam, 2000), instead of trying to escape these individually (e.g., by crossing a picket line ('scabbing') or leaving the organization). Participation in union activities has been observed mainly among those who strongly identify with the union and its goals, and who believe that existing work conditions can be improved by such action (Simon & Klandermans, 2001). This is consistent with the notion that social change is a *group*-level identity management strategy that is pursued when the current relations between the group are perceived to be illegitimate and/or unstable.

Additional empirical evidence indicates that the prospect of collective position improvement is a crucial factor in this process, as this alleviates the threat implied in having low group status and thus can induce members of low-status groups to stick together and pursue collective identity

improvement. In a recent study on the effects of performance differences in task teams (Scheepers & Ellemers, in press), members of a team that performed worse than other teams initially showed increased blood pressure, which is a physiological indicator that they experienced threat as a result of their team's inferior performance. However, physiological signs of threat were reduced when the teams could participate in a follow-up task, which allowed them an opportunity to change their collective status for the better. The reverse pattern was observed among members of teams that had initially performed relatively well; they experienced *more* threat after they were informed that the relative performance of the groups could change in a second task, which in their case implied a possible *loss* of relative status. Thus, this study clearly indicates that it is not just the current status of the group *per se* that determines whether people find it attractive or threatening to be part of the group. The *stability* of intergroup differences—and the opportunities for future *changes* in the standing of the group that are perceived as a result—are also crucial determinants of such perceptions.

Further research, examining how differences in intergroup standing affect group goals and collective effort, confirms that when the situation suggests that the group's performance can be improved, team members who identify strongly with their group tend to set higher collective goals, which in turn actually help them to achieve a superior group performance (Ouwerkerk, De Gilder, & De Vries, 2000; Ouwerkerk et al., 1999). Conversely, when the relative standing of the group seems secure (e.g., because over time one's own team has *consistently* outperformed other teams), this elicits satisfaction with collective achievements resulting in a sense of complacency and lack of effort on the group task (Ouwerkerk & Ellemers, 2002). In sum, in situations where collective identity improvement seems feasible, social identification is maintained while people actively try to improve their collective identity.

When we turn to the strategy of *individual mobility* in work settings, at the organizational level there is converging evidence that employee turnover tends to increase as the public image of the organization for which people work becomes less favorable (e.g., Meyer & Allen, 1997; see also Mael & Ashforth, 1992). This is consistent with the notion that the pursuit of individual identity improvement leads people to distance the self from undesirable groups. However, when we further examine the strategic ways in which people present their identity in work-related contexts, it becomes clear that, even when an actual change of group affiliation (as in the case of organizational turnover) is not possible, people can and do express a preference for being considered in terms of certain group memberships rather than others. Such a pattern is displayed by specific groups of workers who have reason to believe that they will be regarded as less suitable or less successful employees, as a consequence of the fact that they belong to social categories that are devalued in a work context. For example, this is found among women and members of ethnic minorities who emphasize or

de-emphasize group-prototypical traits (e.g., sociability, reliability), depending on how members of their group are perceived in a specific work setting (Schmitt, Branscombe et al., 2003).

This general phenomenon of identity negotiation is illustrated by evidence that the gender identity of female workers—that is, the extent to which they describe themselves as representative of their gender group and are inclined to display behaviors that are characteristic for their gender group—tends to vary across situations, depending, for instance, on the proportional representation of women in the upper echelons of the organization in question (Ely, 1994). For instance, in organizations where it is exceptional for women to obtain the most prestigious jobs, those women who aim for a successful career tend to emphasize how they differ from other women. That is, they present themselves in terms of stereotypically *masculine* traits while they continue to perceive other women in the organization as stereotypically feminine (Ellemers, 2001a; Ellemers, Van den Heuvel et al., 2004).

However, in line with social identity reasoning, individual-level and group-level strategies involve a fundamentally different definition of self (i.e., in individual terms or in group terms, respectively). As a result, an important consequence of the use of individual mobility strategies—for instance, where women try to advance by acting like 'one of the boys' (Fiske & Glick, 1995)—is that they are less likely to align with other women in order to engage in collective action designed to improve the treatment of women in general (e.g., by promoting other women or endorsing affirmative action schemes; Fajak & Haslam, 1998; Tougas & Veilleux, 1988; for a review, see Schmitt, Ellemers et al., 2003). Work with members of ethnic minorities reveals similar processes at play (James, 1995, 1997; Postmes & Branscombe, 2002). The operation of this mechanism can be seen to contribute to the fact that—despite some notable examples of individual success—women and ethnic minorities remain generally disadvantaged in the workplace (Ryan & Haslam, in press).

The countervailing mechanisms involved in the pursuit of individual mobility and social change were recently demonstrated in a simulated prison experiment conducted by Haslam and Reicher (2002, in press). Designed as a field test of social identity theory, participants in the study were randomly assigned to groups as prisoners or guards. In the first phase of the study participants were told that individual prisoners could be promoted to guards (i.e., group boundaries were permeable). As predicted, here the prisoners worked individually to try to improve their personal situation (e.g., by vying for promotion), and this led them to display citizenship toward the prison organization and to comply with the rules set by the guards. However, after promotion was ruled out, the prisoners' sense of collective identity increased and, again as predicted, this encouraged them to work together to resist and challenge the guards' authority and undermine prison rules. Moreover, the qualitative (observational) and quantitative (psychometric,

physiological) observations which support this analysis (see Haslam & Reicher, 2002; Reicher & Haslam, 2003) illustrate in a relatively novel and vivid way how the conditions that promote individual mobility prevent attempts at social change and vice versa.

While the research summarized above attests to the fact that identity management strategies—and the changes in social identity expression that accompany the use of these strategies—are actually manifest in work settings in the ways predicted by social identity theory, it also reminds us that it is people's *belief systems* about the properties of the situation, rather than the situation's objective features, that determine preferences for certain strategies over others. That is, whether or not people try to improve their performance individually or as a group not only depends on whether or not individual or group advancement is *objectively* possible, but also on whether they see this as *subjectively* feasible or even desirable (Ellemers, Spears et al., 1997). For instance, a recent study (Barreto, Ellemers et al., 2004) showed that in a job qualification procedure, participants perceived and responded very differently to identical individual advancement opportunities depending on their social identity and the identity-based prospects of success at the task. Specifically, whereas men who participated in a competitive job selection procedure thought they had a realistic chance of success and performed well on the focal task, female participants in this same situation rated their chances of being selected as much lower, and actually performed less well on the critical intelligence test. Thus, while the application of social identity reasoning might seem to suggest that individual performance and achievement can be encouraged by giving people the opportunity to advance as individuals, this research reminds us that, if those people continue to perceive themselves in terms of their group-based identity, very different outcomes will materialize.

However, even when individuals seem more at liberty to negotiate their social identity (e.g., because their group membership is not immediately visible to others), this does not necessarily imply that individual mobility is the ideal strategy. For instance, those who try to escape the negative implications of their group membership by hiding their true identity in a work setting (e.g., their sexual or political preference, or the fact that they have some physical or mental disability), suffer from psychological distress and lowered well-being due to their fear of exposure (Frable, Platt, & Hoey, 1998; Goffman, 1963). In fact, they may not even be able to reap the expected benefits from their use of this strategy, as the cognitive effort of suppressing the devalued identity tends to make it even more salient (Lane & Wegner, 1995; Macrae, Bodenhausen, Milne, & Jetten, 1994; Smart & Wegner, 1999, 2000; Wegner & Gold, 1995). They can also expect increased derogation from other ingroup members if their status as imposters is discovered (Hornsey & Jetten, 2003). As a result, recent research indicates that the very attempt to hide one's social identity from others in a collaborative

performance situation can backfire as it results in an *increased* perception of the self in terms of the devalued identity, and in *lowered* self-confidence in relation to the task at hand (Barreto, Ellemers, & Banal, 2003).

In this section, we have reviewed research showing that different identity management strategies can be observed in work settings and that these strategies are observed under the conditions predicted by social identity theory. In particular, people actively negotiate their identity, constrained by the opportunities that the situation affords. In addition to group-level strategies (social competition when group statuses are insecure and social creativity when they are secure), we have seen that individual workers tend to associate with groups, organizations, or workteams that are successful. They do this by complying with organizational norms, improving their individual performance, and de-emphasizing those traits or behaviors that are characteristic for their membership in groups which are devalued in the workplace.

At first sight, and in line with meritocratic ideals, individual mobility strategies might appear to offer the most attractive prospects for optimizing career success. However, as we have seen, this strategy has some clear drawbacks. *First*, it is important to note that the career success of a small number of (token) group representatives will not improve (and may even erode) the position of the group as a whole and, thus, can undermine attempts to bring about much-needed social and organizational change (e.g., to redress sexism). *Second*, we should keep in mind that people are not always able or willing to forsake traits or behaviors that characterize their group-based identity—and it may be ethically inappropriate to expect them to do so. *Third*, even when individual workers want to throw off or hide their social identity, their attempts to do so will not always be successful. Finally, *fourth*, if their attempt to pass into the high-status group is unsuccessful, they are likely to be shunned and resented by members of their former ingroup, and so will suffer the anguish of dual rejection (Branscombe & Ellemers, 1998).

Social Identity as a Motivator of Organizational Behavior

Having examined the contextual features that can lead people in work situations to identify at the collective rather than the individual level, this section considers the likely implications of social identification for motivated behavior in work situations. In the I/O literature, theories of work motivation aim to understand (a) which conditions encourage people to invest behavioral energy in their work (*energize*), (b) which activities they are likely to focus their efforts on (*direction*), and (c) what makes them persevere in such efforts over time (*persistence*; Pinder, 1984, 1998; see also Steers, Porter, & Bigley, 1996). To date, though, theory and research on work motivation have focused mainly on the motivational processes underlying the behavior of individual workers as *separate agents*, examining the individual needs that people may

have, their own independent goals and expectations, or the personal outcomes they find rewarding (e.g., Donovan, 2002; Pinder, 1984, 1998; see Ellemers et al., 2004 for a more extensive discussion of this issue). For instance, whereas the influential equity approach explicitly focuses on the social nature of work motivation, it has mainly addressed the possibility that equity considerations derive from *interpersonal* comparisons (Donovan, 2002; Mowday, 1979).

However, it has been acknowledged that this approach only applies to a certain class of work situations, while in many cases it remains unclear how justice evaluations develop (Gilliland & Chan, 2002). Notably, the pursuit of collective (organizational) goals or joint (team) outcomes has not constituted a systematic topic of research in work motivation (Ambrose & Kulik, 1999) and, to the extent that this has been the case, the motivation to engage in collaborative efforts has been considered largely in terms of interdependence or instrumental exchange (see Tyler, 1999, for a similar critique). As we have argued previously, this emphasis on people's personal self-interest as the primary driver of work behavior is empirically limited, not least because it fails to provide a satisfactory explanatory account for observations of the 'selfless' behavior that people often display in work contexts (see Ghoshal & Bruch, 2003 for a similar critique).

Thus, to be able to understand these work situations, the challenge in the area of work motivation is to understand how people are *energized* to engage in behaviors that are significant primarily at a collective level, such as 'service provision' or organizational citizenship behavior (Brief & Motowidlo, 1986; Organ, 1988), how they *direct* their activities toward individual as well as collective goals, in particular when these seem incompatible (e.g., when the pressure to meet individual targets prevents people from helping their colleagues), and how they *sustain* behavioral effort on behalf of the collective when the individual benefits of doing this are unclear (e.g., because of organizational changes, or insecure job prospects; see also Meyer & Allen, 1997; Veenstra et al., 2004). We argue that people's work-related social identity, because it provides a self-conception in collective terms, *can* energize people to exert themselves on behalf of the group, facilitate the direction of efforts toward collective (instead of individual) outcomes, and help workers to sustain their loyalty to the team or organization through times in which this is not individually rewarding. The following subsections examine the implications of this reasoning for the analysis of teamwork and group performance, and for the analysis of communication as it relates to motivated behavior in organizations.

Group performance

A classical concern in the theory and practice of teamwork and group performance has been to determine when the motivation and performance of a

group is *less* than could be expected on the basis of the abilities of the individual workers, i.e., 'social loafing' (Karau & Williams, 1993), and under what circumstances the whole is *more* effective than the sum of its parts ('social laboring'; see also Haslam, 2001). The majority of the work in this area has focused on the danger of so-called *motivation losses* in groups (Steiner, 1972), aiming to establish means to avoid or minimize their occurrence. Based on the assumption that people who work on a collective task feel less individually accountable for their efforts than when they perform the same task individually, it is argued that people generally tend to work less hard on group tasks than on individual tasks (Kravitz & Martin, 1986). Accordingly, typical solutions to the social loafing problem involve measures that emphasize how the individual may benefit from the group's performance—for instance, by making the contributions of individual team members more visible, or by showing how the achievement of group goals may help obtain personally valued outcomes (Karau & Williams, 1997).

When people primarily conceive of themselves as separate individuals, they can only be expected to direct their efforts toward the achievement of collective goals when this affects their individual outcomes (e.g., because they fear they may be sanctioned for failing to exert themselves on behalf of the group). Under such circumstances, individual accountability can also increase performance with respect to collective goals. However, research by Barreto and Ellemers (2001; see also Jetten, Branscombe, Spears, & McKimmie, 2003) suggests that such measures have only limited value. That is, people who identify as separate individuals can be induced to work for the group as long as they have to account for their efforts in public, but fail to do so when working under more private conditions. Furthermore, while increased individual accountability can help avoid motivational losses in groups, it does not inform us of the possible *gains* that may be achieved from teamwork. In fact, to the extent that the individuation of team members takes away from the 'groupiness' of the team, measures taken to avoid motivational losses might even preclude processes that would achieve synergy through collaboration (i.e., where 'two plus two equals five').

While the avoidance of motivational losses (rather than the promotion of motivation gains) is the best possible outcome in cases where people do not feel emotionally involved with the group, we argue that *increased* motivation and performance ('social laboring') can be achieved in groups where people primarily see themselves in terms of their workteam or organization. The same Barreto and Ellemers study that showed how people who define the self at the individual level make their efforts contingent on the likelihood that they will be personally sanctioned for failing to show the desired behavior, also revealed that those who defined themselves in terms of social identity consistently worked for the group regardless of whether or not their behavior was subject to scrutiny from others. This suggests that a self-definition in collective terms leads people to internalize group goals as intrinsically

motivating, while self-definition as a separate individual implies that displays of group-oriented behavior depend on the presence or absence of external pressure to do so (in this case, public accountability; see also Barreto & Ellemers, 2002, 2003). Consistent with this notion, research has revealed that groups of close friends or teammates display less social loafing than groups comprising strangers or mere acquaintances (Williams, Karau, & Bourgeois, 1993). This appears to be a product of the higher levels of commitment that are observed in the friendship groups (Jehn & Shah, 1997). Such evidence implies that—while traditional remedies for social loafing may be effective when workers collaborate with each other as separate individuals—measures that enhance the salience of a collective identity should provide a more effective way of motivating people to achieve collective goals and optimize group performance (see also Ellemers, 2001b; Tyler & Blader, 2000; van Knippenberg & Ellemers, 2003).

While we have argued that the awareness of a shared identity may direct group members' efforts toward the achievement of collective goals, it is important to note that this will not *necessarily* result in greater group productivity. When group members establish their collective identity by setting distinct goals for the group, this not only fosters their sense of identification with the group, but also increases their efforts to achieve these particular group goals (see Wegge & Haslam, 2003). However, depending on the content of these goals, systematic underperformance or excessive absence can also be the result, which would seem undesirable from a managerial point of view (as in the case of so-called 'soldiering' where a group contrives collectively to underperform; Taylor, 1911; see also Gellatly & Luchak, 1998). Thus, a counter-intuitive consequence of this process is that enhanced group identification can even increase the amount of effort directed at the achievement of *individual* goals when distinctive group norms prescribe individualistic behavior (Barreto & Ellemers, 2001)—for instance, when organizational culture emphasizes individual competitiveness.

Communication

As well as looking at motivation *per se*, there is also value in examining the way that social identity and self-categorization processes impact upon the *communication processes* in work settings that help shape work-related behavior. Following arguments developed in the first section of this review, we argue that identity-based expectations determine the interpretation and effectiveness of communication within and between groups (e.g., Haslam, 2001; Irmer, 2004; Postmes, 2003; Postmes, Haslam, & Swaab, in press). As has been demonstrated more generally in the context of intergroup relations, people tend to interpret the same behavior differently depending on

whether it is performed by an ingroup or an outgroup member. That is, the general tendency to hold a more positive view of ingroup members than of outgroup members results in consistent and predictable patterns of attributions for the performance of ingroup and outgroup members. For instance, when an ingroup member is seen to fail at a task, this is attributed to bad luck, whereas the same performance shown by an outgroup member is taken as indicating a lack of competence (Hewstone, 1990; Pettigrew, 1979).

This differential interpretation of the behavior of ingroup and outgroup members (which depends, *inter alia*, on previously held expectations about these groups) also emerges in the way people *communicate* about the behavior of others, as it is reflected in the linguistic terms they choose to convey their behavioral observations to others (Maass & Arcuri, 1996; Maass, Salvi, Arcuri, & Semin, 1989). For instance, people tend to describe desirable behavior in more abstract terms when it is displayed by an ingroup member ('she is helpful') rather than an outgroup member ('she got him the file he wanted'), while the reverse is true in the case of undesirable behaviors displayed by ingroup ('he shouted at his secretary') and outgroup ('he is aggressive') members. Importantly, programmatic research exploring these ideas has demonstrated, *first*, that people are usually unaware that their communications are biased in this way, and, *second*, that such differently worded messages can evoke a completely different impression of the person in question, even though the behavior it relates to is held constant (see Wigboldus, Spears, & Semin, 1999 for an overview).

Moreover, not only do people *send* different messages about ingroup and outgroup members, there is also evidence that recipients *interpret* work-related communications differently depending on whether or not they share the same identity. This not only affects the impressions people hold of their co-workers, but in turn also affects their own behavior and the eventual success or failure of collaborative performance.

The latter point can be illustrated by two research examples. In the first, Bruins, Ellemers, and De Gilder (1999) used an experimental set-up to examine the motivational consequences of communication in a context where people's task decisions could be overruled by others. Specifically, participants working on a stock-trading exercise were given messages from a supervisor who, in different conditions, overruled their trading decisions either rarely (20% of the time) or frequently (60% of the time). As expected, results showed that people generally disliked being overruled, and tended to respond more negatively than in cases where the supervisor generally approved of their decisions. However, and more relevant to our present discussion, such responses also depended on whether or not participants thought they shared the same social identity with the supervisor. More specifically, those who received the message that their decisions were over-ruled by an ingroup supervisor attributed this to external pressures on the

other person. As a result, under these conditions, people maintained a cooperative attitude toward the supervisor, and invested effort helping him/her on a subsequent task. In contrast, when the message that one's decisions were overruled was conveyed from an outgroup supervisor this decision was explained with reference to that person's group membership. Consequently, when performing an additional task, research participants were more likely to refuse to help the supervisor.

The second example pertains to research on conflict resolution through negotiation by Harinck and Ellemers (in press). This research shows that—due to differential interpretations of identical messages—behavioral sequences tend to develop differently among two parties who share the same social identity than they do between members of different groups (see also Moore, Kurtzberg, Thompson, & Morris, 1999). Harinck and Ellemers (in press, study 1) demonstrated that—in anticipation of actual negotiation—an ingroup negotiation partner is generally expected to be more trustworthy and cooperative than an outgroup negotiation partner (see also Brewer & Kramer, 1985; Kramer & Brewer, 1984; Kramer, Pommerenke, & Newton, 1993; Kramer, Shah, & Woerner, 1995). However, a second study by Harinck and Ellemers (in press), in which negotiation was actually followed through, showed that the provision of identical information affected the interaction differently depending on the group membership of the person who communicated it. Specifically, an ingroup partner who volunteered information about his/her personal interest in the negotiation elicited a *cooperative* exchange with mutual concern for both parties' interests (i.e., personal disclosure enhanced trust), but when an outgroup negotiation partner revealed his/her personal interest, this led to reduced concern for the other and resulted in more *competitive* negotiation behavior (i.e., personal disclosure *reduced* trust).

To conclude this section, in summary we have shown that, in line with social identity principles, circumstances which induce a sense of common identity among those who work together tend to promote collaborative effort and to improve group performance. This runs counter to traditional approaches to the problem of social loafing (which advocate individuation as a means of avoiding motivational loss) but it also opens up the prospect of achieving motivational gains through collaborative work, and helps create collaborative contexts in which the whole is greater than the sum of its parts. Our examination of the way that social identity affects communication in work contexts has also shown that whether or not people identify with their co-workers generates identity-based expectations about those others that shape patterns of communication and in turn affects displays of motivated behavior. In this way, social identities shape the way in which people both send and receive information in organizational contexts and this has important ongoing consequences for the development of interactions and the impact that these have in turn on motivation and performance.

Social Identity as a Determinant of Normative Behavior and Organizational Influence

We noted above that self-categorization theory provides an analysis not simply of the way in which individuals' perceptions and judgements are shaped by social identity concerns, but also of the way in which social identity provides a basis for mutual social influence (Turner, 1987, 1991). Specifically, the theory asserts that an important consequence of people perceiving themselves in terms of social identity is that they agree, and expect to agree, with others who they categorize as similar to themselves in any given context. In this way, social identity has an ongoing *regulatory* function as a basis for normative information that gives potentially idiosyncratic observations social and organizational currency. Moreover, it is argued that abstractly determined *information quality* is not the sole (or even the major) determinant of influence in the manner suggested by classical social psychological theory (cf. Festinger, 1953). Rather, the capacity of any information source to exert influence is conditioned by that person's social categorical relationship to the recipient.

Support for these ideas is provided by a large body of social psychological research (reviewed in Haslam, 2001; Postmes, 2003), which has also fleshed out a number of corollaries. Specifically, along the lines of the discussion in the previous section, evidence broadly relevant to the analysis of social and organizational communication suggests that (a) it is only possible to exert positive influence over other people to the extent that we and they are acting in terms of shared social identity (McGarty, Haslam, Hutchinson, & Turner, 1994; Mackie, Worth, & Asuncion, 1990; Wilder, 1977); (b) only those with whom we share social identity are seen as qualified to inform us about relevant aspects of social reality and, hence, to reduce our subjective uncertainty about the social world (McGarty, Turner, Oakes, & Haslam, 1993); (c) the impact of feedback from another person on our perceptions and behavior depends on their ingroup–outgroup status (Brewer & Kramer, 1985; David & Turner, 1996, 1999); (d) expectations of people's ability to coordinate behavior, and the motivation to do so, are contingent upon perceptions of shared social identity (Haslam, Turner, Oakes, McGarty et al., 1998); and (e) desire for affiliation and positive construal of interaction also depend on a sense of common identity (Hogg & Turner, 1987).

Recent work by Haslam and colleagues (Haslam, Jetten, O'Brien, & Jacobs, 2003; Haslam, O'Brien, Jetten, Vormedal, & Penna, 2004; Haslam, Waghorn, O'Sullivan, Jetten, & O'Brien, 2004) has also demonstrated how these ideas can be applied to the analysis of communications surrounding organizational stress, and specifically to issues of *stress appraisal* (after Lazarus & Folkman, 1984). Transactional theories of appraisal have argued that whether or not a particular stressor is interpreted as stressful depends, among other things, on the stress-related information that people are exposed

to (e.g., in the form of informational support). When people are uncertain about a potentially stressful situation, the information supplied by others—regardless of who those others are—is thought to enable them to clarify their understanding of the situation and guide their emotional reaction (Aspinwall & Taylor, 1997). However, self-categorization theory predicts that stress reactions will not be determined by information alone, but will also depend on the ingroup–outgroup status of the information source. Consistent with this argument, Haslam, O'Brien et al. (2004) found that information from an ingroup source did affect appraisal in the manner predicted by transactional theorists (e.g., Lazarus & Folkman, 1984), but that information from an outgroup source had no such effect. Students were less distressed by mathematical tasks if fellow students said they were challenging rather than distressing. However, the same information from a non-student had no such impact.

Studies in the field of leadership have fleshed these points out further. We noted above (p. 72) that the research of Platow et al. (1997, 1998) has shown that followers' endorsement of a leader varies as a function of the degree to which that leader embodies (is prototypical of) an ingroup category that is salient for followers. This line of research has also shown that the leader's capacity to *influence* followers is contingent on the same factors. Platow et al. (1998) have demonstrated that the extent to which followers are influenced by a (male) CEO's injunction to use internal memoranda varies as a function of the degree to which that leader's behavior (his treatment of ingroup and outgroup members) communicates his ingroup membership and serves to advance ingroup goals. Haslam and Platow (2001a) obtained similar findings in a study where a (male) student leader had developed a policy of erecting billboard sites on a university campus. Here participants only supported this policy and, critically, were only willing to do work that would help turn it into practice (by generating useful suggestions for implementation) to the extent that the leader's behavior indicated that he was 'one of us' rather than 'one of them' (see also Duck & Fielding, 1999; Jetten, O'Brien et al., 2002).

However, because the definition of social identity is context-dependent (see pp. 51–53, 68–72 above), it is also the case that the capacity for any individual to influence other group members will also depend on features of normative and comparative context. Support for this idea comes from Platow et al.'s (1998) work showing that the same leader, whose memorandum policy was influential when he adopted a strategy of even-handedness in treatment of ingroup members, was far less influential when even-handedness was extended to the treatment of ingroup *and* outgroup members. In the latter case, the leader proved to be less influential than one who adopted a strategy of ingroup favoritism.

But, as well as accounting for variation in the impact of one person on others, self-categorization theory also predicts that social context should have

an impact on the degree to which all members of a group are motivated to work together to develop *consensus* in relation to a particular organizational activity or norm. In line with the arguments outlined above, the theory suggests that pressures for consensus should flow from social identity salience and that they should increase to the extent that (a) features of context (i.e., contextual fit in interaction with cognitive accessibility) make social identity *salient* and (b) those people whose social identity is salient engage in *social interaction* (Haslam, Turner, Oakes, McGarty et al., 1998).

Support for these ideas is provided by experimental studies which examine variation in stereotype consensus as a function of comparative context. These show that groups are more likely to develop consensual stereotypes under conditions where their members interact in contexts where social identity has been made salient by manipulations of fit (Haslam, Turner, Oakes, McGarty et al., 1998) or accessibility (e.g., Haslam, Oakes, Reynolds, & Turner, 1999). Work by Sani and Thompson (2001) also extends these ideas to the analysis of norms surrounding organizational dress—showing that these norms are more consensual to the extent that those who express them interact in contexts where social identity is salient (e.g., in intergroup rather than intragroup settings). Such research supports the argument that social identity processes play a key role in the development of a consensual organizational culture that provides people with a common framework for making sense of, and behaving in, their work environment (Bourassa & Ashforth, 1998; Deal & Kennedy, 1982; Pratt & Rafaeli, 1997).

One further domain to which such analysis has recently been applied is group decision-making—and, more specifically, the analysis of *groupthink* (after Janis, 1971). Research in this area has shown that social identity processes play a core role in the development of the core symptoms of groupthink: (a) overestimations of the power and morality of an ingroup, (b) closed-mindedness, and (c) pressures toward uniformity (Turner & Pratkanis, 1994, 1998; Turner, Pratkanis, & Samuels, 2003; see also Kramer, 1998). For example, recent research by Haslam, Ryan, Postmes, Spears, Jetten, and Webley (2005) has shown that factors which render a shared social identity more salient increase the likelihood that group members will maintain commitment to an organizational project that is central to their identity when that project runs into difficulty. Likewise, a field study of bank employees showed that work group members who deviated from workplace norms were derogated, while similar behavior was rated less negatively when performed by someone who didn't belong to the same work group (Bown & Abrams, 2003). However, in contrast to the view that these processes are inherently pathological (in the manner suggested by Janis, 1971), this analysis suggests that they are quite rational—serving group maintenance functions and allowing groups to engage in *collective action* by which means they can 'follow through' on projects (whether 'good' or 'bad') that they might otherwise abandon.

This last point is an important one, as it is common in the social and organizational literature for researchers to malign processes associated with depersonalized, de-individuated group activity at the same time that they champion those associated with personalized, individuated behavior. This means that, even if the productive potential of teams is recognized, practitioners generally remain wary of groups and their psychology—believing that this entails a loss of accuracy, rationality, and selfhood (for a discussion, see Postmes & Spears, 1998; Reicher, 1996; Turner & Oakes, 1997).

In contrast to this view, the social identity approach suggests that the psychological processes implicated in all the phenomena we have discussed above—from leadership and motivation to stereotyping and groupthink—are fundamentally rational and adaptive at the group level. More than this, though, it can be seen that social identity and self-categorization processes are *essential* in the sense that they make these various higher order organizational phenomena possible. In the boldest terms, we would assert that without social identity, and the forms of social perception and social interaction that it specifies, there could be neither organization nor organizations (see Haslam, Postmes et al., 2003).

Social Identity as an Organizational and Political Project

The research reviewed in the above sections focuses on the nature and consequences of social identity, but it says little about the ways in which social identity can be used and managed in organizations. For organizational psychologists in particular this has been a significant issue and one that has underscored debate surrounding issues of negotiation, diversity, and change (for reviews see Jackson, 1992; Reynolds, Turner, & Haslam, 2003; van Knippenberg & Haslam, 2003). In all of these areas, core questions center on the way that (perceptions of) intergroup and intragroup differences might be managed in order to promote harmonious group relations and to obtain positive organizational outcomes (e.g., employee satisfaction, enhanced productivity).

In looking at this issue, the main strategies that researchers have focused on differ in the degree to which they place emphasis on the value of identities defined at different levels of abstraction (personal, subgroup social, and superordinate social). The main alternatives that have been considered are represented schematically in Figure 2.5.

Based, among other things, on findings from the minimal group studies, some of the earliest work in this area argued that social identity was itself fundamentally incompatible with positive organizational outcomes. If social identity leads inevitably to homophily and intergroup anatagonism (e.g., as Jost & Elsbach's, 2001 reading suggests) then clearly progressive organizational interventions should work simply to downplay employees' sense of their group memberships—particularly if these are defined oppositionally

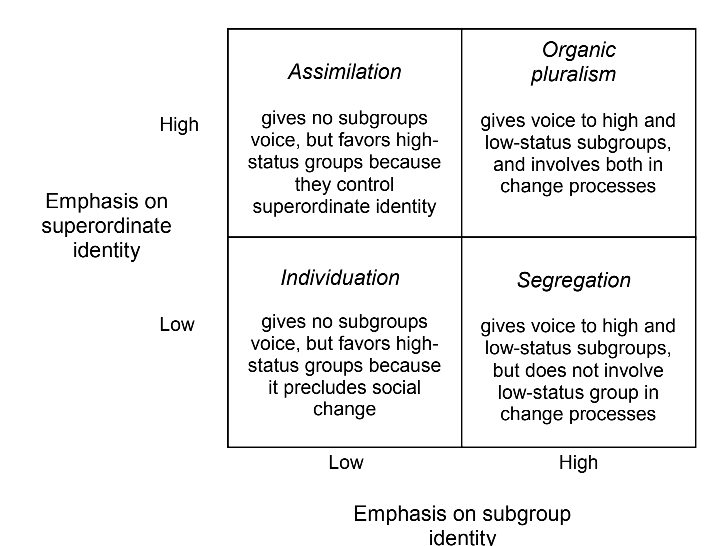


Figure 2.5 Four approaches to identity development and management.

within the organization. Such prescriptions are not uncommon in the organizational literature (e.g., Daft, 1995) and they can be traced back to the seminal writings of Taylor (1911), who explicitly emphasized 'the importance of individualizing each workman' to optimize work performance (Taylor, 1911, p. 73). However, evidence suggests that *individuation* strategies of this form are not particularly successful (e.g., see Hewstone & Brown, 1986). In part, this is because social identities are often a central component of employees' self-definition and behavior and, hence, they prove resistant to this form of restructuring (Jetten, O'Brien et al., 2002). Even where social identification can be watered down, though, this is often undesirable, since, as noted above, social identity is a core motivator of a range of positive organizational behaviors (e.g., organizational citizenship).

In the light of the problems with individuation approaches, two other strategies whose merits have been assessed in the literature are (a) *separatism* (also known as *segregation* or *simple pluralism*), in which groups are encouraged to pursue distinct interests and goals, and (b) *assimilation*, in which groups are encouraged to merge their distinct identities into one common superordinate identity.

On the face of it, one might expect that separatist solutions would be least promising as these might be expected only to promote intergroup division, conflict, and hostility. There is evidence that this can sometimes be the case (e.g., Hewstone & Brown, 1986). However, research also suggests that group members—particularly those in low-status groups (e.g., members of ethnic minorities)—can benefit from the sense of intragroup solidarity and social support that relations of this form promote (Branscombe, Schmitt, &

Harvey, 1999; James, 1997; Postmes & Branscombe, 2002). Moreover, social identity researchers are increasingly questioning the view that group-based conflict *per se* is bad, noting that it is often the only way that low-status groups can have their concerns addressed (Haslam, 2001; Tajfel & Turner, 1979). There is also evidence that oppositionally defined conflict is often desirable as a first stage in identity development processes as it ensures that core issues and concerns are fully aired and understood (Eggins, Haslam, & Reynolds, 2002; Eggins et al., 2003; O'Brien et al., 2004; Stephenson, 1981).

Diametrically opposed to separatism, the strategy of assimilation has long-standing status within organizational psychology (dating back to Mayo, 1949) as a means of promoting industrial harmony. This strategy has been advocated most vigorously by proponents of Gaertner et al.'s *common ingroup identity model* (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; see also Anastasio, Bachman, Gaertner, & Dovidio, 1997). These authors' experimental work with students and their field research on organizational mergers suggests that strategies which encourage different groups to cast aside their old group memberships and embrace a new superordinate identity—one that is inclusive of members of both the ingroup and the former outgroup—leads to reductions in ingroup bias such that members of the former outgroup come to enjoy levels of favoritism from which only the ingroup had previously benefited.

However, recent work by Van Leeuwen and her colleagues (van Leeuwen & van Knippenberg, 2003; van Leeuwen, van Knippenberg, & Ellemers, 2003) calls these assumptions into question. In particular, experimental and field research suggests that a simple blending of two old identities into a single new one can be problematic because it poses a threat to group distinctiveness (Branscombe, Ellemers, Spears, & Doosje, 1999; Breakwell, 1983; Hornsey & Hogg, 2000a; Jetten, Spears, & Manstead, 1997). Research over the course of a restructure of government organizations by Jetten, O'Brien et al. (2002) makes a similar point, showing that attempts to destroy old departments and meld them into new ones led to particularly poor outcomes (low organizational identification, high resistance to change) for those who identified strongly and uniquely with the pre-restructure unit. Ellemers (2003) reports similar findings in studies of the Dutch National Council for Child Protection and the Hungarian police force.

Furthermore, van Leeuwen et al.'s (2003) research suggests that problems with assimilation are particularly pronounced when there are status differences between groups (as there typically are; see also Terry, 2003). Here, members of low-status groups are likely to feel especially threatened and can react adversely to the fact that the high-status group will typically have greater influence over the definition of the resultant superordinate identity (Mummendey & Wenzel, 1999; Stephenson, 1981). For example, in Terry et al.'s (1996) study of merging hospitals, discussed on p. 62 above, members of

the low-status group acknowledged the inferiority of the ingroup on status-relevant dimensions, but *accentuated* their superiority on the status-irrelevant ones.

Faced with evidence of this form, there is now a reasonable consensus in the literature that, in multiple group settings, the optimal identity structure is neither separatist nor assimilationist. On the contrary, it is *organically pluralistic*, such that members of the different groups come to act in terms of a superordinate identity that does not gloss over group difference, but rather *incorporates group difference as an identity-defining feature* (González & Brown, 2003; Haslam, 2001; Haslam, Jetten et al., 2003; Hornsey & Hogg, 1999, 2000b; Jetten, Duck et al., 2002; van Leeuwen & van Knippenberg, 2003). Identity structures of this form are variously referred to as *multicultural*, *bicultural* (Berry, 1984) or *dual identities* (Gaertner, Bachman, Dovidio, & Banker, 2001; Hornsey & Hogg, 2000b) and evidence from a range of studies suggests that such structures are associated with superior outcomes to those associated with each of the other structures considered above. For example, the work of Eggins et al. (2002) has found that negotiators who are encouraged to have high subgroup *and* high superordinate identification have greater commitment to negotiated settlements and perceive them to be fairer than negotiators whose subgroup identities are downplayed or ignored. Jetten, O'Brien et al.'s (2002) research also found that positive reactions to change and commitment to a restructured organization were highest when employees were able to identify with new work groups at the same time that the new arrangements allowed them to retain identification with valued old groups. Further research by Jetten, Duck et al. (2002) also found that leaders of a merged group were more likely to be supported and approved of when they recognized the distinct contribution of pre-existing subgroups. Along similar lines, van Knippenberg, van Knippenberg, Monden, and de Lima (2002) found that long-term commitment to merged administrative and mail organizations was enhanced to the extent that change did not suppress old identities but allowed for a sense of their continuity (see also Ellemers, 2003).

The research literature thus points to the value of distinct organizational units embracing a shared organically pluralistic identity whereby groups 'agree to differ' (van Leeuwen & van Knippenberg, 2003). However, such a conclusion raises a further important question concerning the *activities* that are required to promote an identity of this form. In particular, a key issue relates to the appropriate *temporal sequencing* of programs and interventions designed to increase the salience of identities defined at different levels of abstraction.

Research that has looked at this issue supports the view that, rather than attempt to develop a superordinate identity and then 'break it down' into subgroup identities, it is better to start by allowing subgroup members to engage in activities that promote that identity and then bring different groups

together with a view to building a superordinate understanding. Such research is only in its infancy, but Eggins et al.'s (2002, 2003) work indicates that negotiation is improved if a phase of 'subgroup caucusing' precedes a phase of 'superordinate consensualization', and this finding accords with evidence from the negotiation and conflict literatures. Haslam, Eggins, and Reynolds (2003) have synthesized these ideas in the form of an integrated model of organizational development—the ASPIRe model (acronym for Actualizing Social and Personal Identity Resources; see also Eggins et al., 2003; O'Brien et al., 2004)—which draws upon the broad corpus of organizational work in the social identity tradition. This model specifies a four-phase process which starts by ascertaining the subgroup social identities that employees use to define themselves in the context of organizational life as a whole (rather than imposing those identities on them or assuming which ones are important; e.g., on the basis of demography). In the next two stages these subgroups meet, first separately, and then together in order to identify issues and establish goals that are relevant to those identities. In the final phase, organizational planning and goal-setting are informed by the outcomes of the previous two phases.

Full tests of this model are underway (see O'Brien et al., 2004) but preliminary evidence suggests that ASPIRe provides a useful framework for managing both diversity and stress, especially for members of devalued or low-status groups (O'Brien & Haslam, 2003). In large part, this is because it allows groups to develop and express social identities that are important to them in a supportive and non-threatening context, and empowers them to take important issues forward and reconcile them with the identities of other groups and the goals of the organization as a whole.

Clearly, these issues of identity management are complex, and they bring into play a range of political concerns that are customarily excised from organizational treatments of topics such as conflict, diversity, and stress (see Ellemers, Haslam, Platow, & van Knippenberg, 2003; Haslam, 2004 for reviews). Nevertheless, if the practical potential of the social identity approach is to be realized, this is a nettle that needs to be firmly grasped. Moreover, by attempting to come to terms with the political as well as the psychological dimensions of identity, this should allow for a more fruitful dialogue between researchers in the range of disciplines (e.g., sociology, history, politics, management, economics) whose interests converge around this fundamental topic.

CONCLUSION: WHAT THE SOCIAL IDENTITY APPROACH OFFERS AND WHAT IT DOES NOT

Our review of research that applies ideas from the social identity perspective to issues in I/O psychology, on the one hand attests to the immense appeal

and popularity of the approach, but on the other uncovers some important controversies in the literature. Thus, we want to conclude, *first*, by considering the added value of a social identity approach to the understanding of organizational problems, *second*, by examining the reasons for its appeal, *third*, summarizing the problems that have arisen in the past, and, *finally*, by exploring the ways in which these problems may be avoided in the future.

What does it add?

After summarizing the central ideas and defining the concepts that characterize social identity theory and self-categorization theory, in this chapter we have reviewed research showing how the application of this body of work contributes to the understanding of the cognitive and motivational dynamics of identity in organizations, as well as the interplay between multiple possible identities. That is, we have specified the circumstances that enhance the cognitive *salience* of particular identities rather than others, and have demonstrated the implications of this for the relevant *content* of people's identities. Furthermore, on a more motivational note, we have examined how people actively *negotiate* their work-related identities. We have reviewed research illustrating the use of different identity management strategies in work situations, within the constraints set by, on the one hand, the objective characteristics of the situation at hand and, on the other, people's subjective beliefs about the opportunities and obstacles they face.

Subsequently, we have used a social identity analysis to understand how common goals or values can be adopted by individual workers, so that they become internalized as intrinsically motivating. We have shown how these insights help create the circumstances that optimize group performance, and we have considered how transformation of the self from an individual to a group level impacts upon work-related communication. Then, we have moved on to explain how a social identity approach can help us understand and predict the ways that people cope with uncertainties and stress, and how the process of social identification is essential to coordination in groups as well as to successful leadership. Finally, we have addressed the political dimension of this knowledge which emerges when it is applied with the aim of resolving practical organizational problems. As we have seen, some consequences of social identity processes may appear incompatible with higher level organizational goals, and awareness of how this works may be used by managers who want to encourage the organization and its members to develop in certain directions rather than others.

Why does it appeal?

As is evident from its immense and growing popularity among those who aim to understand the psychological dynamics of organizational life, the social

identity perspective holds out a number of attractions for researchers and practitioners. It provides a rich theoretical framework that provides a unified perspective from which to understand and address a plethora of issues that are relevant in the contemporary workplace. It also offers a range of tried-and-tested methodological and empirical tools to assist researchers with the practicalities of this enterprise.

However, in addition to these 'good' reasons, the social identity approach has also been embraced for 'bad' reasons. Importantly, it uses concepts that appear to converge with familiar terminology and work-related metaphors and that are amenable to relatively straightforward empirical examination. As a result, on occasion, the rich store of predictions that the social identity framework offers has been used merely to harvest single hypotheses. As we have noted, this has contributed to inaccurate representations and misconceptions of the theory. Specifically, some researchers have used social identity theory: (a) to promote social and organizational identification as an individual difference variable, (b) to predict the universal occurrence of ingroup bias, and (c) to characterize group behavior as merely another arena in which considerations of personal self-interest and instrumental exchange operate. In each of these cases, we have explained why and how they involve a misconstrual of fundamental premises of theory.

In sum, the attention that organizational researchers have paid to the social identity perspective is to be welcomed, but we also feel that its theoretical resources have been underused in some respects and overused in others. Specific predictions have been overused to the extent that they are reified as universal mechanisms and come to be seen as the psychologized essence of theory. At the same time, other aspects of the theory—for example, the operation of different identity management strategies under different circumstances—have been underused, and are often overlooked. This has resulted in the paradoxical situation that social identity and self-categorization theories are sometimes criticized for not incorporating concerns which in fact are a key component of their original formulation.

What are the problems?

Thus, despite its widespread appeal, attempts to use the social identity approach to address and resolve organizational problems have at times proved frustrating. Researchers have found it hard to provide a simple answer to their practical questions and, hence, have started to question the value of this theoretical framework. This complexity of the theory and the need to incorporate moderated relations (instead of merely predicting main effects), have led some to conclude that the theory is unparsimonious and irrefutable, as the same basic idea can be used to explain and predict effects as well as counter-effects (for more elaborate discussions of this issue see Ellemers et al., 2003a, b; Turner, 1999). However, as we have tried to

show, empirical practices founded on flawed understanding (e.g., using identification as an individual difference variable or conceptualizing predicted effects in terms of interdependence and self-interest) simply do not do justice to the theory and, hence, the limited contribution of research that has employed these practices speaks to the flawed application of sound ideas, and not necessarily to shortcomings of the theoretical perspective.

These very developments have elicited objections from those who contributed to original formulations and further developments of social identity theory, as they argue that social and organizational researchers present the theory as a straw man and criticize it for the wrong reasons (Ellemers et al., 2003a, b; Turner, 1999; Turner & Reynolds, 2001). As we saw above, defenders of the social identity perspective have in turn been critical of researchers who press social identity principles into service in the interests of piecemeal empiricism, in order to psychologize ingroup bias, or to promote identity as an apsychological metaphor. In certain ways it can be seen that neither of these stances is very productive. For when scientific debate and empirical research are focused only on these disputes, other more promising opportunities for theoretical advancement and practical understanding are lost. It is in this spirit that we presented our overview of relevant controversies above, as we think that these need to be dealt with and left behind before we can appreciate and benefit from the important contributions that social identity work is in a position to make.

How should we proceed?

In their seminal article, Ashforth and Mael (1989) concluded that the application of social identity theory to organizational problems can help understand issues of organizational *socialization* (the development of commitment and the internalization of organizational values and beliefs), the resolution of *multiple role* demands (the ordering or separation of multiple identities), and the emergence of *conflict* in the absence of objective causes (i.e., between subunits within the same organization). Thus, the research agenda they outlined focused on three main issues, namely:

1. The development of a measure of organizational identification that could not only be distinguished from other related constructs, but could be defined in relation to different subgroups in the organization in order to establish multiple commitments.
2. The examination of dynamic changes in organizational identity (e.g., as a result of newly created organizations, or as a result of new appointments) and the internalization of organizational values.
3. The interplay between identification, comparison, and conflict, incorporating the effects of different dimensions of intergroup comparison, and the perceived legitimacy of the status quo.

Table 2.2 Topics addressed in articles on 'social identity' and 'organizations' (1990–2004).

Theme	Topic	Frequency	%
Conceptualization	Conceptualization and measurement	24	14
	Multiple identities	22	13
Dynamic changes	Mergers and acquisitions	10	6
	Distinctiveness and salience	5	3
	Development and newcomer socialization	4	2
Comparison and conflict	Organizational attractiveness	21	13
	Diversity and conflict	36	21
	Responses to threat	6	4
Other	Communication	8	5
	Leadership	15	9
	Motivation	6	4
	Other (ethics, norms, symbols)	10	6
	Total	*167*	*100*

Yet, reflecting retrospectively on the way that social identity research in this area has actually developed, it is clear that it did not stick to this agenda. Looking at Table 2.2, in which published organizational articles that deal with social identity issues are catalogued in terms of the main topic they address, it might superficially appear that the themes that have emerged in the literature relate broadly to the paths identified by Ashforth and Mael (1989), as issues of conceptualization and multiple identities are indeed among the most studied. However, closer inspection of these published papers suggests that most of this work has failed to address these topics in such a way as to provide answers to the key questions posed by Ashforth and Mael.

First, there has been some discussion about the conceptualization and measurement of identity in organizations (e.g., Bergami & Bagozzi, 2000; Hamid, 1996; Mael & Ashforth, 1992), and it has been acknowledged that people can identify with different organizational constituencies (e.g., Mael & Ashforth, 2001; van Knippenberg & van Schie, 2000). However, research driven by the idea that workers can have multiple identities has mainly been used to explain the fact that identification with the organization tends to be lower when people prefer to define themselves in terms of an alternative or competing identity—for instance, in terms of their family role (Lobel & StClair, 1992), or in terms of their national identity in a multi-national organization (Salk & Shenkar, 2001). As a result, to date only a small set of studies have explicitly focused on the way different multiple identities are *interrelated*, or how they can be managed (e.g., Jetten, O'Brien et al., 2002; Pratt & Foreman, 2000). A promising direction for future research in this area can be found in the development of ideas (a) about organizational

'faultlines' that tend to emerge when multiple categorizations reinforce each other to define specific subgroups of workers in the organization (Lau & Murnighan, 1998; Thatcher, Jehn, & Zanutto, 2003), and (b) about cross-cutting categorizations that may help reduce perceived differences and resolve intergroup conflict (Crisp, Hewstone, & Rubin, 2001; see Cartwright, 2005).

Second, although there is a small body of research that approaches the effects of organizational mergers, acquisitions, and restructuring from a social identity perspective (e.g., Jetten, O'Brien et al, 2002; Terry, Carey, & Callan, 2001; van Knippenberg et al., 2002), some studies in this area have merely examined how initial identifications may facilitate or hinder the success of such changes—treating identification as an individual difference variable (e.g., Haunschild, Moreland, & Murrell, 1994). In a similar vein, organizational research on distinctiveness and identity salience has merely established that people are more likely to be aware of a particular identity when this represents a minority rather than a majority in the organization (Ely, 1994; Mehra, Kilduff, & Brass, 1998). However, so far no attempts have been made to trace how these identifications (and their behavioral consequences) are *adapted* when the relative distinctiveness of different groups in the organization *changes* over time. This is a highly relevant issue, as demographic developments, globalization, and migration all imply that organizations will continue to be confronted with changes in the composition of their personnel, in terms of gender, age, and ethnic or cultural background. Another striking omission in research to date is that only a handful of studies have focused on other forms of change in organizations; for example, those that involve newcomer socialization, increasingly flexible employment practices (Veenstra et al., 2004), and organizational schism (Sani & Reicher, 2000; Sani & Todman, 2002). Thus, despite Ashforth and Mael's admonitions (1989), it would seem that, to date, research on social identity in organizations has failed to provide an extensive analysis of the ways in which organizational change (at both global and local levels) affects people's identities (for a notable exception, see Herriot & Scott-Jackson, 2002).

Third, studies on comparison and conflict so far have mainly focused on establishing that people are more likely to identify with organizations that have a positive image (e.g., Dukerich et al., 2002; Dutton et al., 1994; Turban & Greening, 1997), whereas increased turnover is observed in less attractive organizations (Alvesson, 2000). It is striking to see that the most heavily researched topic is that of diversity and conflict in organizations. Nevertheless, we feel the majority of work in this area does not do justice to the social identity approach as it typically makes reference to social identity theory only in order—incorrectly—to provide a source for the prediction that demographic differences between members of the organization should hinder organizational identification, enhance conflict, and decrease performance

(e.g., Polzer et al., 2002; Zatzick, Elvira, & Cohen, 2003). In contrast to this interpretation, as noted previously, we maintain that application of social identity reasoning leads to the prediction that diversity can have *positive as well as negative* effects on identification and performance, depending on the extent to which diversity represents organizational goals and values (Reynolds et al., 2003; Rink & Ellemers, 2003; Van Knippenberg & Haslam, 2003). The observation that ethnic diversity among employees is associated with increased performance in innovation-focused organizations, whereas diversity diminishes performance in low-innovation organizations (Richard, McMillan, & Chadwick, 2003), is consistent with this reasoning, and in our view supports—rather than challenges—an analysis in social identity terms. Turning to the other topics that have been investigated in the broad area of comparison and conflict, again only a few studies have addressed more complex issues, such as strategic responses to social identity threat and the way in which these are influenced by the presence of multiple comparative dimensions, or the perceived security of existing intergroup relations (e.g., Ashforth & Kreiner, 1999).

In sum, we would conclude that—rather than having to develop novel or additional ideas about the possible contributions of social identity (and self-categorization) principles to organizational psychology, or specifying the added value of a social identity approach—progress could in fact be made simply by attending faithfully to the research agenda originally laid out by Ashforth and Mael (1989). In practical as well as theoretical terms, there is thus considerable scope for discovering more in the future by rediscovering more from the past.

Yet, in addition to the topics that Ashforth and Mael (1989) identified, some traditional areas of research in organizational psychology (such as motivation, leadership, power, and communication) have only just begun to be explored from a social identity perspective. The initial results of these efforts hold out great promise for the development of a broader and deeper understanding of these organizational phenomena. This strategy has already yielded an abundance of innovative ideas that have significant theoretical implications and relevant practical consequences (see Ellemers et al., 2004; Haslam, 2001, 2004; Haslam, Postmes et al., 2003; Hogg & Terry, 2001; Turner & Haslam, 2001). We would argue, though, that in order for the exploration of these and other topics to be maximally beneficial, enthusiasm for new challenges still needs to be tempered by respect for the pioneering contributions of the original theory and metatheory. This is not because there is nothing new under the sun, but because more will be found if unhelpful barriers to illumination are removed.

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Chapter 3

PERSONALITY IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY: NOT MUCH MORE THAN CHEESE

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What would happen if 100 leading I/O psychologists were asked to react to the following?

> Suppose that I wish to measure intelligence. In an attempt to do so, I generate a set of items that are all variations on the question, How intelligent are you (e.g., How smart are you, Are you brainy, Are you dumb as a post, dumb as a brick, dumb as a president, etc.)

The reactions of the 100 I/O psychologists would, in turn, be variations on the theme, 'Is this some kind of joke?' Well, yes. Or at least it would be a joke if it weren't for the fact that we are seemingly untroubled by the adoption of an analogous approach for the measurement of personality.

What if the medical sciences never got beyond symptoms? In other words, what if all we knew about polio was paralysis? What if all we knew about AIDS were skin lesions and weight loss? What if all we knew about venereal disease were ... bad example. Scratch that (so to speak). If our knowledge of these diseases went no further than the symptoms associated with them, then we could do nothing to treat or prevent them. Fortunately, the medical sciences do not stop at symptoms. Unfortunately, I/O psychology seems content to stop with symptoms when it comes to conceptualizing and operationalizing personality.

Interest in personality has been revived in I/O over the past 15 years. Given the undeniable importance of 'will-do', as opposed to 'can-do', sorts of attributes in the workplace, it is well that the de facto 25-year moratorium on personality in the workplace ended. On the other hand, we in I/O have largely limited ourselves to trait-based approaches to personality and to self-report measurement. The purpose of this chapter is to explore why we have

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so limited ourselves and what the consequences of these limits are for understanding the person within organizational contexts. We accomplish this goal by considering the trait approach and the historical aspects of our field that have limited our focus. We then examine the alternatives to traits and self-report that provide a window of opportunity for advancing our understanding of personality characteristics and for guiding workplace practices.

APPROACHES TO TRAITS AND MEASUREMENT IN I/O PSYCHOLOGY

Although there is not complete consensus on the definition of 'trait', we choose that of Hogan (1991) who defined it as a behavioral trend or pattern. A trait is phenotypic rather than genotypic, structural rather than functional (Snyder, 1993). Thus, a person who is seen as following through on promises, organizing her surroundings, and continuing to work on a task until it is completed is given the trait label 'conscientious'. A person who behaves in an agreeable manner is 'agreeable'. A person who reacts emotionally and verbalizes anxiety is 'neurotic', and so on. What is more, these labels apply regardless of the underlying causes of these observed patterns of behavior.

We use the term 'self-report' to mean objective (as opposed to projective) assessment directed at the target person. The advantage of self-report is ease: ease of development, ease of administration, and ease of scoring. The disadvantages are also well known: intentional distortion and self-deception. We return to these later.

TRAITS, SELF-REPORT, AND I/O

That our field focuses almost exclusively on a trait approach combined with self-report measurement seems to us self-evident. Nevertheless, we offer two bits of evidence. First, in reviewing the edited volume *Personality Psychology in the Workplace* (Hogan & Roberts, 2001), we note that the only mention made of non-trait concepts (e.g., moral character, ego) is made in chapters written by non-I/O psychologists. Second, in reviewing the first three issues of the *Journal of Applied Psychology* for 2003, we counted 16 articles in which the personality (as opposed to attitudinal variables such as organizational commitment) of real (as opposed to paper) people was assessed. Of these, all but one used self-report measures (the other used a projective measure), and only four involved motives, goals, beliefs, etc., as opposed to traits such as conscientiousness and extraversion.

Let us then consider what is missing. By focusing exclusively on traits, we

fail to consider (a) motives, schemas, goals, beliefs, and other less behavioral aspects of personality (Fiske, 1994; Pervin, 1994), (b) situational factors that might influence the translation of human hardwiring into behavior (Mischel & Shoda, 1995), and (c) the explanations for the observed patterns of behavior (John & Robins, 1994; Snyder, 1993). At best, traits tell us what people tend to do (at worst, they tell us what people want us to believe that they tend to do). Traits tell us little about the motives, the cognitions, and the biochemistry that lead to behavior (Ozer & Reise, 1994). Neither do they tell us anything about the aspects of situations that might channel the influence of motives, cognitions, and biochemistry into behavior.

By using 'objective' self-report, we restrict ourselves to self-concept at best. The problems with self-report measures of personality are well known and needn't be repeated here. It suffices to say that we have not been satisfied with self-report measures of other variables of interest (e.g., cognitive ability, job performance), and that we have responded to calls (e.g., Dunnette, 1963; Guion, 1961) for more construct-oriented approaches to the measurement of these other variables. So it seems odd that we would accept self-report of personality as adequate, knowing what we do about the ability and willingness of people to fake as well as the degree to which people like to think well of themselves.

And what is the price that we have paid? It is impossible to know for certain. For now, we suggest that one index of the costs associated with our narrow approach to personality is the degree to which our criterion-related validities are not commensurate with what we believe to be the case regarding the overlap between personality and performance domains. Next, we discuss the possible advantages associated with broadening our conceptual and empirical perspectives.

Barrick and Mount (1991), without doubt, deserve much of the credit for re-awakening our interest in personality as a predictor of workplace outcomes. The paper was one of the most widely cited of the decade, and with good reason. However, it is interesting to note that the predictor criterion correlations presented in Barrick and Mount (1991) are more or less the same correlations that led Guion and Gottier (1965) and others to suggest a moratorium on research exploring the predictive value of personality. Increasing acceptance of statistical corrections for artifacts has led to larger and larger corrected values (e.g., Mount & Barrick, 1995), but the uncorrected values remain disappointing. Moreover, if we go beyond bivariate correlations and consider incremental validity (e.g., Cortina, Goldstein, Payne, Davison, & Gilliland, 2000), we see that typical measures of personality contribute very little to the prediction of performance. As Mischel and Shoda (1994) aptly stated, 'The basic data of our field remain reassuringly stable: only the interpretations seem to shift' (p. 158).

If one agrees with the notion that employers place at least as much importance on personality as they do on other characteristics, then something

must be wrong. As Hogan and Roberts (2001) put it, 'Individuals whose income depends on the performance of others understand that personality matters' (p. 5). No matter what the job, people make many choices every day, and these choices influence a person's level of output. On the other hand, it is rare to use all of one's abilities. In other words, one's level of ability rarely sets one's performance apart from the performance of others if for no other reason than because one rarely makes use of all of one's ability. Dispositions, on the other hand, create distinctions among people all day, every day. And yet, most of the data suggest otherwise. We contend that the reasons for these disappointing results lie in our nearly exclusive focus on traits and our reliance on self-report measurement.

This is not to say that work on traits has been fruitless. The development and acceptance of the Big Five has been critical to the development of the field of personality psychology. As Eysenck put it, '. . . the taxonomy precedes causal analysis; we must analyze and classify the entities in our field of study before we can frame meaningful theories concerning their behavior' (1991, p. 779). In the words of Fiske, the Big Five gives us some 'fairly solid ground on which to stand as we explore the wetlands of personality' (1994, p. 123). Allport (1968), Digman (1990), Goldberg (1993), John and Robins (1994), and many others have echoed these sentiments.

Prior to the acceptance of the Big Five, trait psychology was a morass of narrow descriptors, many of which were clearly similar to one another. The field grew very slowly because the study that examined the predictive value of, say, dependability was not necessarily seen as building upon previous work on, say, conscientiousness. The Big Five gave us a common lexical thread with which we could tie our work together. It also gave us a structure from which we could explore causes.

But we didn't.

Fortunately, others have. In the section that follows, alternatives to the trait-based approach and their relevance to understanding behavior in the workplace are discussed. This is followed by a discussion of operational issues and viable alternatives to self-report measurement.

ALTERNATIVES TO A TRAIT APPROACH

In this section, we discuss alternatives to the trait-based conceptualization of personality that dominates our field. Specifically, we focus on major focal concepts other than traits that have received substantial research attention by psychologists in various subdisciplines. These concepts include: (a) motives, (b) cognitions, and (c) physiology. For each of these three areas, we define central construct(s) and distinguish them from the conceptualization of traits. Next, we identify research trends and exemplars in I/O psychology examin-

ing these alternatives and summarizing where I/O currently stands. Finally, we discuss what is presently missing in our field, incorporating relevant theory and research from Personality Psychology.

Motives

Although receiving less consideration than traits, motives and related constructs (i.e., needs, goals, values, interests) have a long history in personality psychology (Winter & Barenbaum, 1999; Winter, John, Stewart, Klohnen, & Duncan, 1998). At their most abstract, motives represent an individual's wishes, goals, and desire to bring about particular states of affairs (consciously or unconsciously), or in the case of avoidance motives, states of affairs he/she would like to prevent (Winter et al., 1998). Put simply, motives constitute the why of behavior (McClelland, 1985). That is, motives drive behavior, as people are inclined to behave in ways that satisfy one or more underlying motives.

Despite being lost for much of the heyday of the cognitive revolution, motives are re-emerging, coupled with traits, as the two essential ingredients of 'personality' (i.e., Pervin, 1994; Snyder, 1994; Winter et al., 1998). However, there is little consensus regarding how traits and motives are related, with positions that include (a) traits and motives are the same concept, (b) motives are subsumed by traits (i.e., Digman, 1997; Hofstee, 1994; McCrae, 1994; Wiggins & Trapnell, 1996), (c) traits are caused by motives (e.g., Omoto & Snyder, 1990), and (d) traits and motives represent distinct, but complementary constructs (i.e., Pervin, 1994; Winter et al., 1998). While we wait for empirical research to provide a more definitive answer, there are theoretically meaningful differences in how motives and traits are typically conceptualized. First, unlike traits, motives are grounded in the principles of *equipotentiality* and *equifinality* (Pervin, 1994; Winter et al., 1998). That is, the same motive (or goal) may lead to a variety of different behaviors or actions, depending on the person and the situation (equipotentiality). Correspondingly, the same behavior or action may serve multiple and varied motives for different persons and situations (equifinality). In contrast, traits, as previously defined and as typically examined in I/O psychology, are rooted in the principle of cross-situational consistency and are tied to specific behavioral indicators. Second, motives differ from traits in that motives are conceived of as *drivers* of behavior, whereas traits are *equated* with the behaviors themselves.

Although comparatively few I/O psychologists conceptualize motivation as a personality variable (Hough & Furnham, 2003), motives are not new to our field. Unfortunately, research on motivational concepts such as goal-setting and vocational interests, and research on personality have co-existed as separate literatures with too few efforts to integrate them. That now appears to be changing.

A scan of the recent personality literature in I/O suggests some initial awareness of motives as potential predictors, efforts to relate traits and motives, and the need to integrate traits and motivational concepts into models of work-related behavior (i.e., Barrick, Mitchell, & Stewart, 2003; Barrick, Stewart, & Piotrowski, 2002; Hogan & Holland, 2003; Johnson, 2003; Judge & Ilies, 2002; Rioux & Penner, 2001; Tett & Burnett, 2003). This recent work is encouraging, but it still reflects many of the limits that we have placed on ourselves. First, in contrast to the modeling of implicit processes in research areas such as performance appraisal (i.e., Murphy & Cleveland, 1995), there is relatively little discussion of unconscious (or implicit) motives (for an exception, see James, 1998).

Second, I/O psychology, like other areas of psychology, contains a variety of views on the trait–motive relationship that are mutually exclusive. Whereas some take the position that traits subsume motives (i.e., Hogan & Holland, 2003; Tett & Burnett, 2003), others postulate that motives, and related concepts (e.g., goals), are distinct from traits, with motivational concepts mediating the relationship between traits and work-related outcomes, such as performance (i.e., Barrick et al., 2002, 2003; Barrick, Mount, & Strauss, 1993). It is worth noting that both of these positions characterize traits as superordinate and/or antecedent in spite of the fact that much of the rest of psychology views traits as merely descriptive.

Third, there is considerable diversity in I/O psychologists' conceptualization of motives. For instance, motives can be found at varying levels of abstraction (or generality), from broad orientations (e.g., accomplishment-striving, Barrick et al., 2002) to those that are work or context-specific (e.g., organizational concern, Rioux & Penner, 2001). However, with a few notable exceptions (i.e., Bagozzi, Bergami, & Leone, 2003; Bateman, O'Neill, & Kenworthy-U'Ren, 2002), most of this work has focused on a set of motives at a single level of abstraction and seldom considers the interplay among multiple, sometimes conflicting, motives (or goals).

While these recent efforts are promising, we encourage our field to consider three recommendations for driving future research. Our first recommendation is that we must express an interest in and acknowledgement of the relevance of implicit motives and processes (see Fazio & Olson, 2003; Greenwald & Banaji, 1995; Kihlstrom, 1999). Indeed, unconscious (implicit) aspects of personality are considered central to the understanding of personality processes (i.e., Pervin, 1996, 1999). For example, in a seminal study, Winter and colleagues (1998) demonstrated that implicit motives and traits combined multiplicatively to explain variability in long-term career and socially related outcomes. I/O psychology has been extremely reluctant to embrace the role, or even the existence, of an unconscious. In this regard, we are alone among the areas of psychology that concern themselves with personality.

A second recommendation is that we must go beyond the position that

motives are subsumed by or secondary to traits. For example, in research on predictors of volunteerism, Snyder and colleagues (Omoto & Snyder, 1990; Snyder, 1994) find evidence that traits flow from motives, a position opposite to that of Barrick and colleagues (Barrick et al., 2002, 2003). Likewise, in the research programs of prominent personality psychologists, David Winter and the late David McClelland, motives (i.e., power, achievement, affiliation) play *the* central role in explaining a wide range of organizationally relevant behaviors, including leadership and long-term career success (McClelland, 1985; McClelland & Boyatzis, 1982; Winter, 1973, 1993; Winter et al., 1998). Indeed, motives may be paramount if we are ultimately interested in understanding the *why* and *direction* of behavior, and the *interaction* between a person's personality and their environment (Pervin, 1983, 1996). Issues regarding the 'causal' status of traits notwithstanding (i.e., Cervone & Mischel, 2002a; Pervin, 1994), the 'causal' ordering of traits and motives carries significant implications in our field for modeling a wide variety of organizational phenomena from job performance to recruitment to job design.

The third recommendation is that I/O psychology must be more attentive to the principle of *multi-determination*, as it relates to motives and related concepts such as goals, values, and interests. Consistent with an emerging emphasis on a holistic, dynamic systems approach to personality (i.e., Magnusson, 1999; Mayer, 1998; Mischel & Shoda, 1995, 1999; Pervin, 1999), multi-determination is the principle that any complex phenomenon or behavior (e.g., job performance) involves the interplay of multiple motives or goals. This suggests that motives differ across a number of psychologically relevant dimensions, such as level of abstraction, content, time horizon, and proximity to behavior, *simultaneously*. For example, motives (and goals) can be organized hierarchically (i.e., Austin & Vancouver, 1996; Roberts & Robins, 2000), from more abstract, distal motives (e.g., life goals) to more concrete, task or context-specific motives (e.g., performance goals), and those most proximal to behavior. Focusing on a single level of abstraction or related dimension in such a hierarchy may constrain our ability to explain phenomena that unfold over time, such as occupational or organizational choice, where the relative importance and relationship among different motives (or goals), and not simply their level, likely exerts a substantial impact.

Multi-determination also raises the possibility of motive (or goal) conflict. For example, Sheldon and Elliot (1999), in their self-concordance model, propose that people are more likely to persist at and attain individual well-being when their goals are congruent with enduring motives and values. When goals conflict with enduring motives and values, individual well-being (and by extension, criteria related to it) is adversely affected. Unfortunately, motive (or goal) conflict seems lost in discussions of personality in our field, perhaps owing to our inattention to interactions among personality

traits (Hattrup & Jackson, 1996; Hogan, Hogan, & Roberts, 1996; Witt, Burke, Barrick, & Mount, 2002). As observed by Barrick et al. (2003), motive (or goal) conflict would be especially pertinent to models of job satisfaction and worker morale, given that self-concordance is difficult to achieve in organizations, where goals must be negotiated, aligned with, and sometimes set by others whose motives and values may not match one's own. Likewise, the same applies for the two motive patterns of 'getting along' versus 'getting ahead' (i.e., Hogan & Holland, 2003) and performance, particularly in jobs involving teamwork.

Cognitions

With the advent of the cognitive revolution more than 40 years ago, some personality researchers turned inward, imbuing 'personality' with cognition (Winter & Barenbaum, 1999). Unlike motives, there is no unifying concept or comprehensive definition of 'cognitions' in personality. Rather, the incorporation of cognition into personality research precipitated two significant developments: (a) the emergence of cognitively oriented constructs (e.g., attributional style, need for cognition, Locus Of Control (LOC), conceptual complexity), and a host of self-related constructs (e.g., self-concept, self-esteem, self-monitoring, self-efficacy); and (b) attention to the relationship between personality and cognitive *processes* (e.g., encoding and attention to situational information).

Although some cognitively oriented constructs (e.g., attributional style) have been cast as stable, dispositional tendencies (i.e., Weiner & Graham, 1999), there are meaningful differences between cognitively oriented constructs and traits. Whereas traits emphasize what people *do* (or have done), cognitive aspects of personality focus on what people *think* or *believe*. Cognitive aspects of personality, particularly those from the social–cognitive domain (cf. Mischel, 2004; Mischel & Shoda, 1995, 1999), also encompass both the *structure* and *process* of personality. In contrast, traits involve the description of structure and the organization of stable, enduring patterns of behaviors, culminating most prominently in the emergence of the Big Five or the Five-Factor Model (Digman, 1990; McCrae & Costa, 1999; Ozer & Reise, 1994).

As with other areas of psychology, I/O psychology has been influenced by the cognitive revolution. Although the trait paradigm currently dominates I/O psychology, cognitive aspects of personality are receiving some attention in our field. Like motives, however, research on cognitively oriented personality constructs such as LOC and self-efficacy has progressed largely independent of research on traits. As a result, how these constructs 'fit' within the Big Five is unclear, leading to recent qualitative and quantitative reviews summarizing research related to these variables separately from the Big Five (i.e., Borman, Penner, Allen, & Motowidlo, 2001; Hough & Furnham,

2003; Perrewe & Spector, 2002). The bulk of our attention in this area has been devoted to LOC and self-efficacy (Perrewe & Spector, 2002; Stajkovic & Luthans, 1998). Two other concepts that have received some attention in our literature are James's (1998) *conditional reasoning*, which is comparable with the concept of attributional styles in personality psychology (i.e., Weiner & Graham, 1999), and Judge and colleagues' (Judge & Bono, 2001; Judge, Locke, & Durham, 1997) *core self-evaluations*, a compound 'trait' comprised of self-esteem, generalized self-efficacy, LOC, and neuroticism. While these efforts are comparatively few (Judge & Larsen, 2001), I/O psychologists are beginning to integrate traits and personality-oriented cognitions, with cognitions typically serving an intermediary, process-oriented role to explain the relationship between traits and organizational behavior (i.e., Gellatly, 1996; Johnson, 2003; Judge & Locke, 1993).

Comparatively little attention in I/O psychology has been paid to implicit (or unconscious) cognitions (for exceptions, see James, 1998). Although primarily focused on attitudes, research in social cognition demonstrates that implicitly activated cognitive processes influence people's judgments of others in ways that confirm negative or prejudicial stereotypes (Fazio & Olson, 2003; Greenwald & Banaji, 1995). Within I/O psychology, *how* and *when* these processes are activated would be informative to models relating personality to organizationally relevant judgements, ranging from job candidate evaluations to organizational choice. More practically, research by James and colleagues (James, 1998; James et al., 2000) on personality-oriented implicit cognitive processes, labeled conditional reasoning, has produced validities with organizational criteria that exceed those generated by research adopting a trait approach.

There is in addition emerging research from social–cognitive theories of personality. In particular, research by Mischel and colleagues (i.e., Mendoza-Denton, Ayduk, Mischel, Shoda, & Testa, 2001; Mischel & Shoda, 1999; Shoda, Mischel, & Wright, 1993) carries interesting implications for personality, especially our current conceptualization of 'traits'. In brief, this research finds that people reliably encode and infer their own personality and that of others in *if–then* situation behavior profiles. That is, individuals categorize personality in person *x* situation terms (e.g., Mark is extraverted at parties, but introverted in class). These findings suggest that people's natural conceptualization of personality meaningfully differs from that presumed by the trait paradigm. The implications of this work for the conceptualization and measurement of traits are substantial. These findings suggest that frame-of-reference effects are more than a bandwidth fidelity issue.

There are also alternatives to personality oriented cognitions as mediators of trait–behavior relationships. For example, Larsen and colleagues (Larsen, Billings, & Cutler, 1996; Larsen, Diener, & Cropanzano, 1987) found that people differentially engage in certain cognitive processes (e.g., rumination)

that amplify their affective reactions to life events depicted in photographs. Within a trait activation framework (i.e., Tett & Burnett, 2003), these findings imply that the 'press' of a situation in eliciting a trait would be modulated by cognitive processes, specifically how the situation is interpreted and encoded. An even more powerful example can be found in research on cognitively oriented constructs, such as attributional style and need for closure. Research on these variables and related constructs demonstrates that how one processes social information, and the attributions one makes, predicts their response to others in interpersonal situations (Weiner & Graham, 1998). These findings have clear implications for theories of work-related phenomena, as few (if any) jobs do not involve interpersonal interaction with others (supervisors, co-workers, customers, etc.).

Physiological and Biological Bases of Personality

Although research on the physiological and biological bases of personality has a long history, this research stream has exploded recently, such that it is now recognized as its own paradigm within personality psychology (i.e., Funder, 2001), and warrants its own focused, narrative literature reviews (i.e., Livesley, Jang, & Vernon, 2003; Pickering & Gray, 1999; Plomin & Caspi, 1999; Zuckerman, 2003). When we refer to *physiology*, we are not referring to a single entity (or focal concept), but a loose collection of genetic and physiological variables and processes. Research on the physiological and biological basis of personality can be roughly organized into two streams: (a) *behavioral genetics*, which focuses on the heritability and genetic origins of personality (see Grigorenko, 2002; Livesley et al., 2003); and (b) *neuroscience/biology*, which focuses on identifying neurological and other biological (e.g., nervous system) structures and processes related to personality (see Pickering & Gray, 1999; Zuckerman, 2003).

While some have conceptualized 'traits' as internal, physiological structures (i.e., Eysenck), there are substantive differences between physiological variables and traits, as traditionally conceptualized. Traits differ meaningfully from physiological variables in that physiological variables cover both personality *structure* and *processes*. More importantly, there is distinction between 'causes' and 'reasons' as explanations of socially relevant behavior (i.e., Peters, 1958). That is, 'causes' are internal processes, typically biological, that propel individuals to action. Conversely, 'reasons' refer to cognitive or psychological constructs that provide direction and focus for people's actions. This distinction maps onto traits and physiological variables, in that the latter constitute 'causes', and the former 'reasons'. In this regard, physiological variables may be viewed as temporal *antecedents* and traits as *consequences*.

Of the three alternatives to traits discussed, physiological variables have received the least attention within I/O psychology. At the same time, genetics

and physiology, as they pertain to personality, are not complete strangers to I/O. In particular, there is increasing acknowledgement of the revolutionary potential of genetics to re-shape psychological science and practice in the 21st century (Patenaude, Guttmacher, & Collins, 2002; Plomin & Crabbe, 2000). Some researchers (i.e., Hough & Furnham, 2003; Hough & Ones, 2001) have started discussing genetics and biological testing (e.g., DNA, biometrics) as alternative assessment methods to self-reports. One can also find physiological and biological elements in personality constructs, such as Type A Behavior Pattern (TABP), and to a lesser extent, Positive Affectivity (PA) and Negative Affectivity (NA). Finally, there is a modest theoretical and research base in I/O regarding the genetic bases of dispositional effects and their relationship to organizational phenomena, such as job satisfaction (i.e., Arvey, Bouchard, Segal, & Abraham, 1989; Ilies & Judge, 2003; Judge & Larsen, 2001).

Since examination of personality from a biological perspective is relatively rare in our field, what then are the major themes from the extant literature on physiological psychology of which we should be aware? At the risk of oversimplification, we suggest the following as starters. First, there is growing and reasonably compelling evidence that personality is, to some degree, genetically and biologically influenced (Funder, 2001; Livesley et al., 2003; Pickering & Gray, 1999; Plomin & Caspi, 1999; Zuckerman, 2003). It is no longer a question of 'if' personality and biology are related, but 'how' and 'by how much'. For example, there is now little doubt that introverts exhibit greater physiological sensitivity to stimuli than do extraverts (Stelmack, 1990). More recently, research has identified specific areas within the brain important to personality, such as the amygdala for aggression (Zuckerman, 2003), and specific genes related to particular traits (Livesley et al., 2003; Plomin & Caspi, 1999). Other research references Behavioral Approach System and Behavioral Inhibition System (BAS and BIS; e.g., Fowles, 1988; Gray, 1994) that regulate responses to reward and punishment cues, respectively. These systems are used to explain behavior patterns referenced in trait descriptors. While there is a risk of reductionism in linking personality to physiological variables and processes, attention to these processes would be informative for methodological reasons and for understanding the underlying 'causes' of personality.

Second, research in genetics yields two interesting findings regarding the relative impact of personality and the situation (environment) on behavior (see Plomin & Caspi, 1999). This research suggests a greater need to consider the ways that physiology and situation interact to influence behavior. For example, evidence that the same situation differentially influences individuals of the same 'personality' suggests a more idiographic approach, comparable with Mischel and colleagues' (Mischel, 2004; Mischel & Shoda, 1998, 1999) social–cognitive conceptualization of personality.

ALTERNATIVES TO ASSUMPTIONS OF STABILITY

One of the assumptions that underlie much of personnel selection is that the attributes that we use to select, promote, and otherwise classify people are stable over time and across situations. This assumption may work for cognitive ability, especially in adults, but it does not appear to work so well for personality in general or for traits in particular.

This is not to say that there is no intra-individual, cross-situational stability in personality. However, the search for such stability, from Hartshorne and May (1928) to Mischel (1968) to Mischel and Peake (1982), has often proved disappointing. That said, there are two forms of instability on which we would like to focus: intra-individual instability across situations and inter-individual instability within trait levels. Both have important implications for our field.

Intraindividual Instability across Situations

Research by Shoda et al. (1994) shows that individual children behave in an extraverted manner in some situations, and in an introverted manner in others. Other children respond to the same situations in the opposite fashion. Likewise, some children are aggressive in response to provocation from one kind of source (e.g., adults), but passive in response to provocation from another kind of sources (e.g., peers), whereas other children exhibit the opposite pattern. Thus, there is a great deal of intra-individual inconsistency. When situational factors are taken into account, however, a pattern of within-situation consistency often emerges. Those children who respond aggressively to provocation from a peer at Time 1 are very likely to respond aggressively to provocation from a peer at Time 2. Those same children might respond passively to adults at Time 1 and Time 2. This is not to say that one cannot average across situations. The problem that can arise from using an averaging strategy is that the child who responds aggressively to adults and passively to peers is then equated with the child who responds passively to adults and aggressively to peers.

Thus, a system in which a single trait value is attached to a given person by averaging across situations misses the person by situation interaction. An I/O psychologist might complain that the Mischel research was done with children and is therefore irrelevant to I/O, but similar results have been found with adults (Mischel & Peake, 1982). In any case, it should be noted that this work begins with a theory explaining why cross-situational inconsistency and intra-situational consistency should exist. Situations have 'psychological features' to which we respond differently. Some of us are perfectly at ease one on one but are terrified at the prospect of speaking to large groups. Others are (or become) comfortable in large, impersonal settings but seem awkward and misplaced in more intimate settings. These differences may be

generated by biological or by early environmental differences, but, regardless of their source, they must be important for understanding behavior in the workplace.

But the story doesn't end there. Just as people may gravitate towards jobs that are commensurate with their level of cognitive ability (Wilk, Demarais, & Sackett, 1995), so may they gravitate towards employment situations with psychological features that allow them to behave in a manner that is both comfortable to them and consistent with their values or goals (Roberts & Robins, 2000). Thus, we would expect to find less variability in situations and their features for people at later career stages. For those who are at earlier career stages, however, or for those for whom job change is constrained, we might expect a vast array of situations, a vast array of features, and a vast array of trait levels even within an individual.

None of this should come as a surprise. Other areas of psychology have considered, for example, the evolutionary bases of personality. This research suggests that particular levels of personality variables have adaptive value and that the identification of the levels of key personality variables of others has adaptive value (Bodenhausen, Macrae, & Hugenberg, 2003; Buss, 1991; Fiske, 1993; Fiske & Taylor, 1991). Is there any reason to believe that the exhibition of a particular behavior, without regard for the features of the situation, is adaptive? Being organized may be adaptive on the whole, but reorganizing the file system while the office is on fire is, perhaps, misguided. Being assertive may have its advantages, but anyone who asserts himself while being arrested for armed robbery only succeeds in adding a hospital sentence to his jail sentence.

It should also be noted that this sort of intra-individual instability is different from the sorts of multiplicative models that we tend to focus on in I/O psychology. For example, Barrick and Mount (1993) examined autonomy as a moderator of the relationship between conscientiousness (among other things) and performance. The idea was that the relationship between personality and performance would depend on the situation. This was a good study with important implications. However, it assumed that a given trait was constant across situations. The influence of the trait was hypothesized to vary across situations, but the trait itself was constant. It is another matter entirely to suggest that the level of the trait itself varies with the situation.

Inter-individual Instability within Trait Levels

There is also evidence of inter-individual instability within trait levels. Apart from the role played by the situation, is it the case that a given trait level is associated with a single pattern of behavior? For example, does high extraversion result in the same constellation of behaviors for every person?

Winter and his colleagues have examined the possibility that motives and traits interact to produce behavior. Motives serve as the impetus while traits

'channel' this impetus into a particular direction (Winter et al., 1998). Although it must be said that it is unclear what Winter et al. (1998) mean by 'traits', the notion of interactions between one aspect of a person (i.e., motives) and another (i.e., traits) is an intriguing one. Winter et al. use a comparison of US Presidents Nixon and Reagan to illustrate. Nixon is offered as the prototype of the person who is high in need for affiliation (motive) but low in extraversion (trait) and perhaps emotional stability. Such a person is driven by a desire for friendship, but whose pursuit of this goal is constrained by other aspects of his personality. This results in a person who is warm with those close to him or those with whom he is comfortable, but who is awkward and stilted in a more impersonal forum. By contrast, Reagan would be characterized as high in extraversion and emotional stability, but low in need for affiliation. This results in a man who can easily create the impression of warmth from afar, but who, upon closer inspection, seems cold and disengaged.

US President John F. Kennedy might also have been characterized as high in extraversion. We doubt that anyone would draw many similarities between Kennedy and Reagan. Perhaps they differed in their need for affiliation, their need for power, or even their level of cognitive ability. The point is that knowing one's level on a trait is not enough. In order to predict their actions, we must know more about them.

Each of these sources of instability forces us to question our trait-based approach to personality. This is not to suggest that it is not useful to estimate the correlation between, say, conscientiousness and job performance. The point is that this is a very small part of the total picture. If there is considerable within-person variability in conscientious behavior across situations, or if the effect of this trait on an outcome depends on other attributes of the person, then the emphasis on a single number to represent the standing of a given person on a dimension like personality seems misguided.

ALTERNATIVES TO SELF-REPORT

Although there are some in our field who seem intent on minimizing the problems associated with self-report measurement of personality, others are willing to accept the pervasiveness and damage of intentional distortion and self-deception. Regardless of perspective, we persist in our reliance on 'objective' self-report because we perceive no viable alternatives. We consider here a class of alternatives that will make the skin of the average I/O psychologist crawl: Projective Techniques. Please don't touch that dial just yet.

We will, in fact, focus our attention on a class of projective techniques known as implicit measures. For I/O psychologists, the term 'projective technique' is associated with inkblots and drawings that are scored in an

utterly subjective fashion and that probably reveal more about the tester than they do about the tested. The concept, however, is not irrational. A projective measurement system is designed to *elicit* the construct in question. The test situation is typically ambiguous. This ambiguity is intentional. It provides a sort of void to be filled by the personality of the respondent. We present only a brief overview of a subset of the existing implicit measures (for a more comprehensive review, see Fazio & Olson, 2003).

The best known implicit measurement technique is the Implicit Association Test or IAT (Greenwald, McGhee, & Schwartz, 1998). In an IAT, response latency is used as a measure of the ease with which respondents' pair attributes and targets. For example, the IAT measuring racial attitudes marks the ease with which respondents use target/attribute pairs such as black/pleasant, white/unpleasant, black/unpleasant, and so on. A shorter latency reflects more facility with the pairing in question. One can imagine a similar approach to the measurement of conscientiousness (e.g., organized/competent vs. organized/compulsive), agreeableness (friendly/virtuous vs. friendly/credulous), or adaptability (dynamic/opportunity vs. dynamic/chaos).

A similar implicit technique involves priming. Racial attitudes might be assessed with a 'prime' comprised of a picture of a person of a particular race followed by an adjective for which the respondent must find a synonym. Respondents who take less time to find a connotation for a negative adjective in such a situation than they do for a positive adjective are thought to hold more racist attitudes because the adjective in question was already primed (for that person) by the picture.

Another implicit measure has been developed by an I/O psychologist (of all people). Larry James and his colleagues have developed what he calls a *conditional reasoning* measure (James, 1998). A conditional reasoning measure is predicated on the notion that inductive reasoning is, to some degree, conditional upon personality. Thus, if a person is presented with conflicting information and is asked to make a decision based on that information, the person will tend to attribute more importance and reason to the information that is consistent with his or her own personality. This process is, in turn, based on what James calls *justification mechanisms*. These are the cognitions, often implicit, with which we rationalize a course of action that is consistent with our predispositions. Thus, it is the predispositions that drive us to prefer a particular course of action, and it is the justification mechanisms that allow us to feel that this course of action is rationally driven.

There are other tasks involving sentence completion, description of expectancy-consistent vs. expectancy-inconsistent behaviors, and even tendencies as esoteric as letter preference (see Fazio & Olson, 2003 for a review). All of these approaches have two things in common. First, they do not involve asking the respondent to provide his/her standing on the construct of interest. Second, they are based on hypotheses about how goals, attitudes,

and beliefs manifest themselves. It is this second commonality on which we wish to focus. The development of these methods began with efforts to understand how a given construct would produce a very specific behavior. Once a construct/behavior pairing was hypothesized, a methodology was developed that would allow the pairing to emerge. Specifically, a stimulus was identified that would produce different behaviors depending on one's standing on the construct of interest.

This is very different from the development of self-report measures. Consistent with the lexical tradition, self-report items are generated based on the degree to which they look like the construct of interest. We know a conscientiousness item measures conscientiousness because it looks like a measure of conscientiousness (e.g., it contains facets of conscientiousness, adjectives of conscientiousness, etc.). We hope that this stimulus produces the appropriate response (e.g., selection of the most accurate response option), but we have little in the way of an understanding of internal processes to support this stimulus–response connection.

What we do have is reliability, and it is probably this that has led us to prefer self-report. While self-report measures generate relatively large internal consistency reliabilities and test–retest reliabilities, implicit measures generate notoriously low reliabilities of all types (Cunningham, Preacher, & Banaji, 2001).

We suspect that these low reliabilities, coupled with the difficulty in developing and administering implicit measures, have led us to disregard implicit measures. To this we say, who better than I/O psychologists to build a better (implicit) mousetrap? Who better to isolate and remove the sources of random error that have plagued existing implicit measures? There is reason to believe that such an effort might be worthwhile. In spite of low reliabilities, implicit measures have generated bivariate and incremental correlations with relevant criteria that exceed those typically reported for self-report measures (James, 1998; James et al., 2000). If random error could be reduced substantially, the sky is the limit on predictive validity.

Unfortunately, we have been content to trade random error (e.g., internal inconsistency, temporal instability) for systematic error (intentional distortion, self-deception). We have, in short, chosen to look for our keys under the streetlight even though we dropped them two blocks back. It is our hope that our field will end its rationalization of the use of self-report in personality research. Implicit measurement may not be the answer, but, until we recognize that self-report isn't the answer either, we are unlikely to go far in our understanding of personality in the workplace.

One final alternative to self-report is worth mentioning, even though it doesn't qualify as implicit in the strict use of the term. There has been a great deal of work done on the neurological and neurochemical bases of personality. In addition to Eysenck's work on extraversion, there has been considerable research organized around the BAS and BIS mentioned earlier.

There seems no point in regurgitating the jargon of neuropsychology (see the Biological Substrates section of Revelle, 2003 for a review). It suffices to say that traits such as aggression, hostility, agreeableness, conscientiousness, positive/negative affect, introversion/extraversion, impulsivity, and many others have been linked to particular brain centers and particular neurochemicals. Although the human brain is too complex for anyone to suggest that a given aspect of personality has a single physiological cause, it should interest us to know that the possibility of physiology-based measurement of personality exists. The measurement of extraversion via physiological reactivity is, perhaps, farther along than the measurement of other traits, or than measurement through other means. Nevertheless, physiology, along with any basis for measurement that avoids the problems of self-report, should be of interest to us.

LOOKING FORWARD BY LOOKING BACK

Having established that I/O psychologists have tended to cling to self-report and to trait-based conceptualizations to the exclusion of the alternatives that other areas of psychology have embraced (or at least considered), and having examined some of the consequences of these omissions, it might be instructive to consider why I/O has made these choices. We do not have the space for any sort of comprehensive deconstruction of the history of personality in our field, but a brief glance is illuminating.

The study of traits in psychology began with the realization that personality might be useful to study apart from psychopathology (Eysenck & Eysenck, 1969). In an effort to move away from the wishy-washy, touchy-feely, subconscious emphases of psychoanalysis (our description, not theirs), people like Cattell, Eysenck, and Guilford stressed the importance of quantification and of systematic analysis (e.g., Cattell, 1957; Eysenck, 1960). Personality traits were, therefore, the factors that emerged from factor analysis. Factor analysis was relatively new at the time and was revered in the way that new data analytic techniques sometimes are.

Of course, this got us no nearer to understanding the basis of traits. Even the ancient Greeks had explanations (bad ones, granted) for personality (e.g., strong blood for sanguine personalities, various flavors of bile determining melancholic and choleric personalities, etc.). We, on the other hand, were satisfied with patterns of behavior. This is reflected in the fact that the measures on which our field relies (one would be hard-pressed to find personality measures in the I/O literature other than the NEO, the HPI, the Mini-markers, or lesser known measures that are very similar) are almost entirely descriptive. Why?

Before offering an answer, let us consider our reliance on self-report. This is perhaps less exclusive than our reliance on traits, as it is not uncommon for

personality to be assessed with interviews or with raters in the context of an assessment center. Nevertheless, our brief review of articles published in *JAP* suggested a field that is remarkably reliant on self-report.

Some of the reasons for our reliance on self-report are also the reasons for our reliance on traits. We return to this issue below. An additional reason, however, is that personality assessment was originally intended for use in psychopathological populations. Although social desirability has also been identified as a problem in self-report measures of pathology-oriented personality, it is reasonable to assume the following. First, the pressure to present oneself in a favorable light may be less in certain pathology assessment situations than it is in employment situations. Second, the very pathology that is assessed with measures such as the MMPI may inhibit the distortion of responses. These are only speculations. More important are the reasons derived from the scientist–practitioner model on which we pride ourselves.

Unlike the more basic areas of psychology, I/O has always taken a highly contextualized approach to psychological phenomena. Specifically, we have always been skeptical of research removed from the work context. This is, perhaps, due to our behaviorist roots (i.e., behavior as determined by rewards and punishments). It is ironic in that we are reluctant to generalize lab-based relationships to the workplace because of the influence that features of the workplace might have. At the same time, we seem reluctant to embrace the notion of personality instability across situations. In any case, we often feel that we must make whichever concessions are necessary to gain access to organizations and their data. These concessions often involve using measures that take little time to complete and that are straightforward of purpose. The reason for the former is simple: Organizations unfortunately perceive our research to be of less value to them than we do. As a result, they are reluctant to devote resources such as the time of their employees to its conduct. The reason for the latter is the fear that measures whose purpose is not clear will be perceived as either foolish or hostile.

These are real constraints that we as an applied field must accept. If we want real data, we have to work around real world barriers. However, we must be careful to avoid allowing these barriers to place too great a limit on the questions that we ask and the ways that we ask them. The man looking for his keys in the wrong spot is not going to find them. Likewise, if personality is more than surface-oriented traits, and if the measurement of personality requires more in the way of time to develop, time to administer, and time to score, then we must not allow the particulars of organizational settings to keep us from finding that which we seek.

Another basis for our limited approach to personality is our behaviorist roots. Perhaps the two best known principles of behaviorism are that psychology should restrict itself to the study of the observable and that behavior is produced from without. I/O psychology places varying amounts of importance on the situation depending on the area of interest. When it comes to

focusing on the observable, however, we have been much more willing to tow the line.

This is not to say that previous calls by Guion, Dunnette, and others for deeper thinking about psychological constructs have been ignored. Nevertheless, our field tends to the simpler, more obvious explanations. In the case of personality, we prefer to define it in terms of what we can see (e.g., behavior) instead of what might drive what we see (e.g., motives, physiology, etc.), and we prefer to measure it with things that look like personality (e.g., unadorned self-report items) instead of with things that are more indirect (e.g., implicit measures). Our preferred approach is not without its advantages, but our field has reached a point at which our reluctance to move beyond these preferences stunts the growth of our knowledge relative to other fields. In the final analysis, answering the wrong questions, or providing anemic answers to the right questions will do little to advance our science and our practice.

Of course, why we are where we are is less important than deciding where to go from here. In the next section, we consider some possible futures for the study of personality in I/O.

WHAT THE FUTURE MIGHT HOLD FOR I/O PSYCHOLOGY

Our primary purpose in writing this chapter is to convince our field that it would do well to: (a) expand its conceptualization and measurement of personality beyond traits and self-reports; and (b) establish stronger links to personality psychology. These developments carry significant implications for *both* the science and practice of I/O psychology and, at a more macro-level, for I/O psychology as a field. While these developments may create tension, they will lead to meaningful advances in our understanding (and application) of personality within and across organizations.

We are optimistic about the future because we sense, as do others, that psychology appears to be on the verge of a personality 'zeitgeist'. At present, personality is where cognitive psychology was about 30 years ago. Interest in its fundamental problems, methods, and research questions spans diverse disciplinary boundaries (Cervone & Mischel, 2002a). The scientific study of personality is extraordinarily vibrant, attracting research attention from all areas of psychology (e.g., clinical, cognitive, developmental, I/O, social), and from disciplines outside of psychology, such as anthropology, behavioral genetics, neuroscience, philosophy, and sociology (see Cervone & Mischel, 2002b; Funder, 2001; Millon & Lerner, 2003; Pervin & John, 1999). It is an exciting time, and there are opportunities to make real progress on core issues and substantive questions about the conceptualization and measurement of personality.

I/O psychology, and psychology in general, would benefit from a greater integration of I/O with this emerging, interdisciplinary science of personality (Hogan & Roberts, 2001; Hough, 2003). As we discuss in the following sections, this integration represents both an opportunity and a challenge for I/O.

INTEGRATION AS AN OPPORTUNITY

During the 1970s and 1980s, as the person–situation debate reached its apex, the number of graduate programs in personality psychology declined (Funder, 2001). As a result, much of the research on personality currently taking place is being conducted not by people who necessarily identify themselves as personality psychologists, but by their colleagues in social, developmental, and clinical psychology, and by non-psychologists, such as anthropologists, molecular biologists, neuroscientists, and sociologists (Cervone & Mischel, 2002a; Funder, 2001). Indeed, one might say that personality research, like small-group research a decade ago (e.g., Levine & Moreland, 1990), is 'alive and well, but living elsewhere.' One of the areas where interest in personality is presently thriving is, of course, I/O, which has witnessed a dramatic rebirth in personality research and assessment (see Hough & Furnham, 2003; Hough & Ones, 2001; Perrewe & Spector, 2002).

Integrating our current personality research with areas outside of I/O presents an opportunity to advance our understanding of: (a) key components of personality beyond traits (i.e., motives, cognitions, physiology); (b) the dynamic, interactive nature of personality over time, across persons, and across situations; (c) the processes by which personality causes work-related behavior, cognitions, and affect; and (d) the contributions of personality to both micro- and macro-level organizational phenomena. More practically, this integration is expected to lead to less contaminated, more construct-valid measures, and greater predictive efficiency.

However, I/O psychologists should not merely follow the lead of others. I/O psychology is in a unique position to make substantive contributions to the scientific study of personality. The following are several examples (by no means exhaustive) of ways in which I/O psychology could and should contribute to meaningful advances in personality research and assessment.

Strong Tradition and Training in Psychometrics

In personality psychology, emphasis and formal training in psychometrics has declined (Funder, 2001). This has precipitated concerns regarding the current state of personality assessment, particularly the reliance on short, self-report questionnaires in contemporary personality research (i.e., Funder, 2001; Kagan, 1988; Pervin, 1996, 1999). By contrast, psychometrics

remains a core component of graduate education in I/O psychology, and I/O-trained psychologists continue to make substantive contributions to psychometrics. Two recent examples are James's (1998) conditional reasoning approach to personality measurement and Hough's (Hough & Furnham, 2003; Hough & Ones, 2001) nomological-web-clustering conceptual framework. This tradition and expertise would greatly benefit personality assessment by providing new methods, tools, and conceptual frameworks for measuring personality. It would also create a niche within the broader field for I/O psychology.

Opportunities for Relating Personality to Practically Relevant and Theoretically Meaningful External Criteria

Until recently, there had been a lack of empirical research within personality psychology relating traits (Big Five) to practically meaningful external criteria such as criminality, academic performance, and long-term physical and mental health outcomes (Funder, 2001; John & Srivastava, 1999). Instead, personality psychologists have tended to rely on internal criteria (e.g., intercorrelations among self-reports of different traits), or external criteria that were conveniently and easily accessible (e.g., subjects' preferences for 'paper people'). Organizations offer numerous opportunities to relate personality to criteria that are both practically relevant and theoretically meaningful. These include job and training performance, counterproductive behavior, career and occupational choice, person–organization fit, leadership, and occupational health and safety. Therefore, I/O psychologists have access to a wealth of external criteria that can (and do) speak to the applied and scientific relevance of personality. Indeed, within the past decade, our field has accumulated an extensive research base relating personality to a variety of organizational criteria (see Hough & Furnham, 2003; Hough & Ones, 2001; Perrewe & Spector, 2002); and a research base that has been cited by personality psychologists as evidence supporting the utility of the Big Five (i.e., John & Srivastava, 1999). The critical challenge, as raised in the preceding section, will be to effectively balance organizational access with scientific and methodological progress.

Taxonomies for Assessing and Conceptualizing the Psychological Significance of Situations and Behavior

The study of personality involves three, interrelated components: (a) the person, (b) the situation, and (c) outcomes. While the description and conceptualization of personal variables, most prominently traits, has been extensive, comparatively less progress has been made in conceptualizing and developing personality-based methods for assessing situational variables and the outcomes that might result from combinations of personal and

situational variables (Funder, 2001; Hattrup & Jackson, 1996; Hough, 2003; Murtha, Kanfer, & Ackerman, 1996). I/O psychology offers the tools (e.g., job analysis, performance measurement), the taxonomies for describing the psychological relevance of situations (e.g., Hattrup & Jackson, 1996; Tett & Burnett, 2003), and the structure of outcomes (e.g., Borman & Motowidlo, 1993; Campbell, McCloy, Oppler, & Sager, 1993; Hogan & Holland, 2003). These methodological and taxonomic efforts could be useful starting points (or possible counter-points to similar efforts in personality and social psychology, i.e., Bem & Funder, 1978; Funder, Furr, & Colvin, 2000) for advancing our understanding of situations and outcomes in other socially relevant contexts (e.g., school, family, interpersonal relationships).

INTEGRATION AS A CHALLENGE

As mentioned earlier, a number of indicators suggest that psychology is in the early stages of 'personality revolution', comparable with the cognitive revolution more than 30 years ago (Cervone & Mischel, 2002a). The recent decade-long surge of interest in and research on personality, particularly in I/O psychology, could be the initial stage of this revolution. If I/O psychologists want to be at the forefront of this revolution, it is incumbent on our field to stay current with relevant empirical and theoretical developments in related areas of psychology (e.g., clinical, developmental, social) and other disciplines (e.g., behavioral genetics, neuroscience). While we believe I/O psychology has an opportunity and the potential to be a primary contributor to the advancement of personality theory and assessment, there is also the potential for I/O to fall behind, both in the marketplace of ideas (e.g., production of new knowledge and methods) and, more practically, in securing grants, contracts, and other funding (basic and applied). Staying current with the major research and methodological trends in the emerging, interdisciplinary science of personality presents challenges for I/O psychologists.

Making Sense of Research Findings, Methods, and Techniques for which I/O Psychologists Have No Formal Training

One discipline outside of psychology where major advances in personality research are currently being made is behavioral genetics (see Funder, 2001; Grigorenko, 2002; Livesley et al., 2003; Plomin & Caspi, 1999). Indeed, with the completion of the Human Genome Project and the proliferation of DNA testing, genetics research and testing are likely to revolutionize psychological research and practice in the 21st century (Patenaude et al., 2002; Plomin & Crabbe, 2000). As noted earlier, although genetics research is not entirely new to I/O psychology (e.g., genetic bases of job satisfaction; Arvey et al.,

1989; Ilies & Judge, 2003), the overwhelming majority of I/O psychologists receive little to no formal training in genetics, are unfamiliar with its major journals and professional associations, and seldom attend and/or submit research to conferences in the field. Short of returning to graduate school, what are we to do? One solution is to engage in interdisciplinary research or applied projects where I/O psychologists team up with genetics researchers to solve problems related to personality. An illustrative example that could be used as a model for these efforts can be found in the emerging field of social–cognitive neuroscience (see Ochsner & Lieberman, 2001). A similar type of collaboration could lead to the identification and use of genetics research to understand personality in the workplace.

Finding Time to Stay Current

Another challenge, independent of obtaining the requisite expertise to make sense of research from other disciplines, is the challenge of finding sufficient time to do so. New knowledge generation increases exponentially every year (Adair & Vohra, 2003). While calls for keeping up with research outside of one's own discipline sound good, how one accomplishes this is considerably less clear. Although formal mechanisms, such as the various *Annual Review* series, presently exist, I/O psychology could potentially do more. Some suggestions include: (a) the preparation and publication of interdisciplinary reviews (both qualitative and quantitative) in major I/O outlets; (b) greater attendance and participation of I/O psychologists in more general, cross-disciplinary conferences (e.g., APA, APS); and (c) inviting and encouraging the participation of leading researchers from other disciplines in national conferences and workshops, particularly those associated with organizations such as the Society for Industrial and Organizational Psychology and the International Congress of Applied Psychology.

Maintaining Established Scientific and Professional Boundaries of I/O Psychology

At a time when there is much self-reflection in I/O psychology regarding its 'identity' (i.e., Anderson, Herriot, & Hodgkinson, 2001; Ryan, 2003), the prospect of greater integration with other areas of psychology and disciplines outside of psychology is likely to raise concerns, and for good reason. Maintaining and regulating professional boundaries is essential for ensuring the strategic direction, reputation, and long-term viability of a discipline. I/O psychology arguably has a decided advantage over other areas of psychology (e.g., social, cognitive). Our field and its knowledge and methods are tied to a well-defined *context*, the world of work. Perhaps more importantly, that context is directly connected to and reinforced by physical, spatial, and temporal boundaries. This is not the case, for example, in

cognitive psychology where the focus is often on basic cognitive processes (e.g., problem-solving), and not cognitive processes within a specific, well-defined context. Therefore, I/O would appear to be uniquely positioned to immerse itself in the broader science of personality, while, at the same time, successfully maintaining its own professional and intellectual identity.

FINAL THOUGHTS

I/O psychology has much to gain from and contribute to the larger field of personality psychology. The field could learn a great deal from other areas of psychology and from related fields regarding alternative aspects of personality and how they combine to produce behavior. We can make unique contributions to the study of personality by exporting these notions to the workplace and by developing superior methods of measurement. Given our concerns over being marginalized by the more mainstream areas of psychology, it seems particularly important that we take this opportunity to guide and be guided by the broader field.

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Chapter 4

ORGANIZATIONAL JUSTICE ACROSS HUMAN RESOURCE MANAGEMENT DECISIONS

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In an effort to incentivize performance, Global Technology Design Systems ties employee healthcare premium contributions to performance evaluations. Employees whose performance far exceeds expectations do not pay any premiums, whereas those with marginal evaluations and below pay 100% of the premium. Performance levels between these extremes pay 25%, 50%, or 75% of the premium, depending on performance.

Abroc values individuality and respects employees' and their families' specific needs. In addition to allowing employees the freedom to schedule their work hours around family and other non-work demands, employees' family needs are taken into account when annual raises are distributed; those with greater needs typically receive larger raises.

These fictitious examples highlight how principles of justice that are commonly applied in one area (e.g., performance appraisal or work-scheduling) may appear inappropriate and unfair when applied to a different human resource decision (e.g., health benefits and raises). Why is it unfair to allocate health insurance premiums based on merit, but fair to allocate performance evaluations and salary increases on this basis? Why is it fair to provide benefits such as family-friendly leave policies based on individual need but unfair to allocate raises based on need?

Organizational justice research shows many practical implications of treating employees in a fair manner. Perceptions of fairness lead to positive organizational attitudes and behaviors, including increased job satisfaction, organizational commitment, and organizational citizenship behaviors (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). In contrast, if an employee perceives unfairness he or she is less likely to demonstrate these positive

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outcomes and more likely to exhibit negative attitudes and behaviors. Resulting negative behaviors include sabotage (Giacalone & Greenberg, 1997) and theft (Greenberg, 1990). For this reason, behaving in an organizationally just manner is beneficial to managers and organizations.

Theories that define types of organizational justice and allow for predictions about these types commonly identify three steps: an event or element in the environment, an individual's appraisal of this event according to a set of rules, and an evaluation of whether the event is fair (Cropanzano, Rupp, Mohler, & Schminke, 2001). This basic model is simple but theories of justice differ in the 'type of elements they emphasize (e.g., elements of the outcomes, the process, or interpersonal treatment), the types of rules that are applied (e.g., rules of consistency, equity, voice), and the structure of the justice appraisals that emerge (e.g., procedural justice, interactional justice, informational justice)' (Cropanzano et al., 2001, p. 3). In part these differences between justice theories are explained by basic distinctions between justice types.

Distributive justice was the first justice type introduced and reflects the study of outcomes or, more specifically, outcome fairness (Adams, 1965; Deutsch, 1969). The second type of justice, procedural justice, or process fairness, was distinguished from distributive justice as reflecting the fairness of procedures that result in outcomes (Leventhal, 1976; Thibaut & Walker, 1975). Researchers then distinguished a third type of justice, interactional justice (Bies & Moag, 1986) that addresses the interpersonal and informational aspects of exchanges around procedures and outcomes. Finally, recent evidence supports the use of interpersonal and informational justice as separate types of justice (Colquitt, 2001). Careful distinction between justice types helps to clarify what type of element is being emphasized, the appropriate theoretical rules that apply, and the basic structure of the justice appraisals that emerge.

However, some researchers have suggested that the predictive value of justice types vary depending on organizational context (e.g., Greenberg, 1996). They question how individuals think about justice in the workplace (Cropanzano, Schminke, & Paddock, 2003). Do individuals think about how fair outcomes, procedures, and interpersonal treatment are by averaging over the justice of specific HR policies or are individuals' perceptions of fairness specific to these policies? For example, does an employee view an organization with a very fair hiring process and a somewhat unfair process of merit increases as being moderately procedurally fair based on a combination of the hiring and the merit increases procedures. Or, do perceptions remain specific to these HR decisions (fair hiring but unfair merit procedures). Recent empirical evidence suggests that individuals' perceptions of distributive and procedural fairness, and to a lesser extent interactional fairness, are HR-function-specific rather than justice-type-specific (Cropanzano et al., 2003). When individuals think about these types of fairness, they do so in

part in terms of specific organizational functions (e.g., how fair is my pay) rather than justice types averaged across all organizational functions. This evidence suggests it is possible that what happens in practice—how individuals actually think about organizational justice—does not coincide with the categorizations of justice normally used. Researchers should take care when investigating the fairness of HR functions to pay heed to which of these are being investigated and not to focus only on justice types. Further, we argue that justice researchers should take care to differentiate among these HR functions for several reasons.

First, some HR decisions typically rely on a specific justice principle. For example, the uniformity of work schedules given to most white-collar employees is consistent with the distributive equality rule. Violation of typical justice aspects in these contexts may elicit greater perceived injustice from participants than occurs in situations in which this type of justice is not typical. The examples provided at the beginning of this chapter highlight this injustice. Consequently, generalizing the importance of equality obtained in response to work schedules to other HR decisions (e.g., allocation of bonuses) does not make sense.

Second, most justice research has focused on justice types (e.g., procedural) and the relative importance or interaction effects of these justice types (e.g., procedural by distributive interactions). It is possible that differences between HR decisions may be more important in defining fairness reactions than differences across justice types. That is, through the almost singular focus on justice types and the development of measures related to these justice types, we may have overemphasized the importance of distinguishing types of justice.

Third, in looking at the importance of different elements of distributive, procedural, and interactional justice, it is necessary to understand the underlying causal agent (i.e., individual manager vs. organization) of the HR function being reviewed. Specifically, past research has hypothesized and found support for fairness perceptions depending on a causal agent. For example, Greenberg (1986a, b) found that distributive justice differed as a function of whether an individual or the organization was the cause of inequity. Most likely, employees view either a manager or the organization as more responsible for each type of HR decision. Assuming this is the case, the importance of different justice aspects may systematically vary depending on the party viewed as responsible for the HR policies.

Finally, considerable research has demonstrated the relationship between organizational justice and important employee outcomes such as commitment, turnover, and citizenship behavior (Colquitt et al., 2001). These results are used to demonstrate the importance or robustness of the organizational justice construct. It is possible and likely that the outcomes associated with organizational justice vary across different HR functions. For example, we expect that turnover is more likely to follow injustice in a

promotion decision or pay raise than injustice in a hiring decision. We need to systematically study this variation across functions to understand when and how justice concerns impact different employee outcomes.

For these reasons, we believe distinguishing between HR functions is important in understanding fairness perceptions. We present HR functions, including hiring, performance appraisal, compensation, benefits, and termination, and for each we examine the importance of distributive, procedural, and interactional justice aspects. In doing so we use existing research to make predictions about which justice types and rules are most important for each policy. We do not intend our list of functions to be exhaustive, rather we have identified important functions that are likely to demonstrate interesting variation across justice types. More importantly, we offer evidence that aspects of each justice type vary in importance depending on the HR policy under consideration. Propositions concerning important aspects of each justice type for each HR policy are developed. After summarizing these predictions, we offer theoretical and practical implications, limitations, and future directions. However, first, we begin by providing a more thorough review of existing justice types and defining rules for each.

TYPES OF ORGANIZATIONAL JUSTICE

Previous research has identified distributive, procedural, interpersonal, and informational justice as four important justice types (Colquitt, 2001). Because the specific rules of each of these four types of justice are important to the predictions we make in this chapter, we review the most salient rules for each.

Distributive Justice

Distributive justice involves the fairness of outcomes. Depending on how outcomes are allocated, distributive justice is derived from three rules: equity, equality, or need.

Equity

Distributive justice in the form of equity is derived from equity theory (Adams, 1965), and is based on the idea that outcome allocations reflect input contributions. Equity theory suggests that individuals evaluate the extent to which their outcomes are proportionate to their contributions, relative to relevant comparison others (Adams, 1965). Inequity is perceived if the ratio of outcomes to inputs is greater or less than a salient comparison other. Using an equity-based allocation system, employees who work longer hours or are more productive believe they should receive greater outcomes (e.g.,

pay, benefits, etc.) than employees who work fewer hours or are less productive. A practical example of equity involves performance-based pay systems. In these systems, better performing employees are paid more and poorer performing employees are paid less. Evidence shows that people feel distress in proportion to experienced inequity; those perceiving greater inequity feel more distress (Walster, Walster, & Berscheid, 1978). Further, equity in distribution validates individuals' feelings of group membership and, at the organizational level, allows organizations to efficiently and effectively produce (Folger, Sheppard, & Buttram, 1995).

Multiple early researchers focused on equity, including Adams (equity theory, 1965), Homans (distributive justice theory, 1961) and Stouffer and colleagues (relative deprivation theory, Stouffer, Suchman, DeVinney, Star, & Williams, 1949). Walster et al. noted in 1978 that equity is widely applicable to business relationships. According to Leventhal (1976), organizations use equity as a distribution rule because (1) the business community defines this as the appropriate allocation rule, (2) they are weeding out inferior workers, (3) organizations believe an equitable system is a profitable one, (4) they are trying to avoid conflict. Greenberg (1982) reviewed all three types of distributive justice, concluding that use of equity as a distribution rule is by far the most common type studied by organizational researchers.

Equality

Beyond equity, Deutsch (1975) identified two more types of distributive justice that are important at the institutional level: equality and need. Equality allocations are those in which all individuals have an equal allocation or chance at the outcome. Use of equality in certain distributions allows organizations to retain employees (Folger et al., 1995; Sheppard, Lewicki, & Minton, 1992). For example, many companies offer all employees of a particular category the same benefit package. Despite this common use of equality, little research exists regarding the equality rule of distributive justice.

Need

The third distributive allocation method, need, involves allocating outcomes on the basis of special needs. At the individual level, organizational allocation based on need allows organizations to fulfill member needs so that they can focus on organizational rather than personal goals (Folger et al., 1995; Scheppard et al., 1992). The use of certain family-friendly employee policies (e.g., maternity leave, Grover, 1991) is a practical example of allocation according to the distributive rule of need. Similar to the equality rule, little research exists on the need rule of distributive justice.

Procedural Justice

Originally introduced by Thibaut and Walker (1975) in the context of dispute resolution, procedural justice was discussed in terms of the amount of control an individual has over grievance procedures and over determining grievance-related outcomes. Procedural justice constitutes the study of the fairness of the process used to allocate outcomes (Leventhal, 1980; Thibaut & Walker, 1975). Subsequent researchers sought to define procedural justice rules (e.g., Leventhal, 1980) and to distinguish procedural justice from distributive justice (e.g., Folger & Konovsky, 1989).

Leventhal's (1980) theory of procedural fairness includes eight fairness process aspects: consistent across persons, consistent over time, free from bias, based on accurate information, correctable, representative of all recipients' concerns, based on prevailing moral standards, and based on prevailing ethical standards. Based on this work and work by Thibaut and Walker (1975), Colquitt (2001) identified seven measures of procedural justice in a recent review of the dimensionality of justice. After review of these items, we believe that they can be reduced to three dimensions of accuracy, voice, and consistency as a way to simplify our discussion. These categories may not capture all the subtle nuances of procedural justice, but provide a reasonable representation of the procedural justice construct. Therefore, for purposes of the current chapter we use these three main categories to analyze the importance of different types of procedural justice in specific HR decisions.

Accuracy

The accuracy rule of procedural justice includes procedural justice principles related to the non-biased nature of procedures, the extent to which procedures are based on accurate information, and the ethical and moral basis of the procedures (Colquitt, 2001; Leventhal, 1980). Generally, this rule suggests that procedures should reflect accurate and unbiased information in decision-making.

Voice

Voice involves the extent to which individuals are able to express their views and feelings during procedures, influence the outcome arrived at using the procedures, and appeal the outcome arrived at using procedures (Colquitt, 2001; Folger, 1977; Thibaut & Walker, 1975). Considerable research demonstrates that procedures are perceived to be fairer to the extent that employees are afforded the opportunity for voice (Gilliland & Chan, 2001).

Consistency

The consistency aspect of procedural justice relates to the consistent application of procedures across individuals and over time (Colquitt, 2001; Leventhal, 1980). This rule is similar to equality, but reflects uniformity in the process rather than the outcome.

Interpersonal and Informational Justice

The final two types of justice, interpersonal justice and informational justice, originally were considered one type of justice, interactional justice, which was distinguished from procedural fairness in the 1980s by Bies (1987) and Bies and Moag (1986). Greenberg (1993) distinguished between interpersonal fairness, or the interpersonal treatment of individuals (Bies & Moag, 1986; Shapiro, Buttner, & Barry, 1994), and informational fairness, or aspects of the information that individuals are provided (Colquitt et al., 2001; Greenberg, 1993). Individuals treated with dignity and respect are perceived as being treated in an interpersonally fair manner (Bies, 1987; Bies & Moag, 1986; Greenberg, 1993). Informational justice relates to the amount, nature, focus, and timing of the information provided to an individual. If an individual is given more truthful and specific information early in the process and if this information is focused towards the recipient rather than a larger (or worse, unrelated) group, an individual will perceive informational justice as being fairer. Recent factor analytic work by Colquitt (2001) supports this distinction and has led to the suggestion that there are four justice types (distributive, procedural, interpersonal, and informational). We distinguish between these types of justice and examine the relative importance of the two interactional justice dimensions in this chapter. However, because the distinction between these two justice types is recent, little work exists on interpersonal or informational subtypes. Therefore, we do not use subcategories for these two types of justice and, instead, we examine the relative importance of these two dimensions.

HOW DO PERCEPTIONS OF FAIRNESS DIFFER ACROSS VARIOUS HR FUNCTIONS?

We now consider the ways in which distributive, procedural, and interactional justice varies across the different HR functions. We also examine which specific justice-type rules are more salient for each function and generate research propositions regarding these rules. Where available, our propositions are based on prior empirical evidence. However, for some HR functions, research evidence is scant and our propositions are more speculative.

Selection

According to Arvey (1979) and Arvey and Faley (1988), the hiring process consists of one or more selection procedures designed to discriminate among employee candidates. Selection procedures in this process include recruitment, applications, testing, interviews, references and background checks, and the decision to hire or reject the candidate.

Fairness is central to applicants' perceptions of selection processes (Gilliland & Steiner, 2001). In early work on the fairness of selection procedures, fair selection was defined psychometrically, with unfairness being evidenced by differential selection or prediction rates for different gender or ethnic/racial groups (Arvey, 1979; Arvey & Faley, 1988). Subsequent to this work, researchers began looking at fairness from the applicants' perspective (i.e., what is perceived to be fair). Gilliland (1993) proposed a framework for studying applicant reactions to the selection process based on the different types of organizational justice. In the past dozen years, multiple studies have been based on this fairness-selection framework (e.g., Gilliland, 1994; Ryan, Greguras, & Ployhart, 1996; Steiner & Gilliland, 1996).

Distributive justice

Gilliland (1993) suggested that distributive justice in hiring decisions could follow from any three of the distributive principles. Subsequent research has demonstrated that a matching of expectations around the equity rule has a strong influence on outcome fairness perceptions (Gilliland, 1994). To date, we know of no research that has demonstrated situations in which equality and need are more salient than equity in hiring decisions. Based on this research evidence, we suggest the following propositions.

Proposition 1 *In selection decisions, the salient distributive justice rule is equity, such that violations of equity are perceived as unfair.*

Procedural justice

Many rules of procedural justice have been proposed and investigated (Gilliland, 1993; Gilliland & Steiner, 2001). Generally, research has demonstrated the importance of accuracy-related rules in many selection procedures. That is, hiring procedures are perceived to be fairer if they appear to have face or predictive validity and are based on accurate information (Chan, Schmitt, Jennings, Clause, & Delbridge, 1998; Steiner & Gilliland, 1996; Truxillo, Bauer, & Sanchez, 2001). Indeed, the job-relatedness of the selection process has been demonstrated to be one of the strongest predictors of perceived procedural justice (Bauer et al., 2001). The importance of voice has also been demonstrated in multiple studies through

dimensions such as the opportunity to perform and the opportunity for reconsideration (Gilliland, 1995; Truxillo et al., 2001). On the other hand, studies that have examined consistency have demonstrated less of an impact on fairness reactions (Ployhart & Ryan, 1998). Based on the accumulated research we suggest the following proposition.

Proposition 2 *In selection decisions, the most salient procedural justice rules are accuracy and voice.*

Research has also examined the importance of procedural justice longitudinally over the course of the hiring process (Bauer, Maertz, Dolen, & Campion, 1998). They found that procedural justice was less predictive of attitudes and intentions toward the organization after the hiring decision. This research suggests that procedural justice is important during the hiring process, but that distributive justice is more important once the hiring decision has been made.

Proposition 3 *In selection decisions, procedural justice decreases in importance following feedback on the hiring decision.*

Interpersonal and informational justice

In hiring decisions, the organizational personnel that are involved in the selection process play a large role in perceptions of selection fairness, and especially interpersonal fairness. Gilliland and Steiner (2001) suggest that traits such as respect and affect are important interpersonally in selection situations. This dimension of interpersonal fairness is particularly salient with interviews (Gilliland, 1995).

A lack of information about the use of specific selection tests also leads to perceptions of unfairness (Gilliland, 1995). This is particularly the case for tests where the use is not readily apparent, such as cognitive ability and personality tests. Research has demonstrated that providing information on various aspects of such tests can improve reactions to the selection process at the time of testing and one month later (Truxillo, Bauer, & Campion, 2002). Additionally, research has demonstrated the power of providing explanations with negative hiring decisions for both fairness perceptions and later behavior (Gilliland et al., 2001).

Proposition 4 *The importance of interpersonal and informational justice will depend on the stage in the selection process and favorability of hiring decision, such that interpersonal justice is most important during interviews and informational justice is most important following a negative decision.*

Performance Appraisals

Performance appraisals involve both assessment of work performance and delivery of feedback based on this assessment. Whereas multiple types of appraisals can be used (e.g., 360-degree feedback, supervisor ratings of subordinates, etc.), the most typical form of performance appraisal involves the annual or semi-annual supervisor rating of an employee (Cardy & Dobbins, 1993). This may also include an opportunity for the employee to rate him or herself. Following the appraisal, the supervisor and subordinate meet to discuss the employee's evaluation.

Distributive justice

Regardless of the type of performance appraisal, employees are typically rated based on their performance—an equity distribution method. Existing research reflects this. For example, in his work on this topic Greenberg (1986a) found that a critical dimension of fair performance appraisals was the receipt of ratings based on performance achieved. The other distributive dimension Greenberg identifies was receiving outcomes (e.g., promotion or salary increase) based on ratings obtained. Both of these observations are grounded in the principle of equity. It is possible, but more difficult to imagine, to have performance appraisals based on equality: In some team situations, an overall project rating may be given, which all members of the team share. However, equity is used as the basis for team performance and, because team members are often appraised on an individual basis as well, distribution based on equality probably is overshadowed by distribution based on equity. The allocation of performance ratings based on need is also difficult to image, and is also expected to be judged as unfair, leading to the following proposition.

> **Proposition 5** *For performance appraisals, the salient distributive justice rule is equity, such that violations of equity are perceived as unfair.*

Procedural justice

Work on performance appraisal suggests procedural fairness as an important goal (Folger & Greenberg, 1985). Multiple studies show the importance of accuracy. For example, in their due process model of performance appraisal, Folger, Konovsky, and Cropanzano (1992) suggest that judgement based on evidence is one of three essential features of fair performance appraisals. Further, Greenberg's (1986a) work suggests that middle managers identified 'rater familiarity with ratee's work' and 'soliciting input prior to evaluation and using it' and rated these accuracy elements as important.

Notably, soliciting input prior to an evaluation also relates to voice in performance appraisals, as do two of the other five procedural justice dimensions identified in Greenberg's (1986a) research described in the previous paragraph: 'two-way communication during an interview' and 'ability to challenge/rebut evaluation' to be important. Voice is not only important in performance appraisal, but also, as Korsgaard and Roberson (1995) review, it is important in several different ways: in different forms and at different times in the evaluation. They suggest that two previously identified forms of voice (Folger & Konovsky, 1989), including feedback (e.g., seeking subordinate input) and recourse (subordinate's ability to rebut the supervisor's evaluation), are influential in perceptions of justice. Similarly, Landy, Barnes, and Murphy's (1978) findings suggest that the extent to which employees are given a chance to express their feelings when evaluated relates to their perceived fairness of the performance appraisal (Dipboye & de Pontbriand, 1981). Additionally, Korsgaard and Roberson provide supporting empirical evidence that voice is important at different times in the evaluation, including early in the evaluation (participation in defining performance criteria, Pease, Lind, & Kanfer, 1988) and later in the process (sharing of opinions of self-performance, Kanfer, Sawyer, Earley, & Lind, 1987).

Greenberg's (1986a) work suggests the importance of 'consistent application of standards'. Employees perceive performance appraisals that follow the same format for all employees to be fairer. Just think how unfair it might seem if each employee, regardless of the fact that they held the same job, received a totally customized performance appraisal. Clearly, consistency would be important in this situation. However, organizations usually use performance appraisals that evaluate employees on the same basic job dimensions within a job category, providing a baseline level of consistency in performance appraisals. In these situations, unless employees talk to their colleagues about the exact way in which their evaluation was conducted, employees do not have easy access to additional consistency information. Further, because appraisals deal with the specific performance of each individual, employees may expect appraisals to follow the same format but few employees probably expect all appraisals to be exactly the same. Thus, we suggest that consistency is less important (although not unimportant) in performance appraisal fairness than accuracy and voice.

Proposition 6 *Procedural aspects of accuracy and voice are more important in performance appraisal fairness perceptions than consistency.*

Interpersonal and informational justice

Both informational and interpersonal aspects of performance appraisal are important. For example, the final element of the due process model of

performance appraisal involves adequate notice, an informational justice aspect (Folger, Konovsky, & Cropanzano, 1992). Additionally, Greenberg's (1986b) work on the use of explanations in performance appraisals suggests that, of the explanations given, performance-based justifications are often given for high ratings, apologies are often given for low ratings, and no explanation is offered for average ratings.

Work on informational justice and performance appraisals also suggests that the interactional nature of the information communicated is also important. In line with work by Tyler and Bies (1990), Greenberg (1986b) contends that this commentary communicates caring, appreciation, or disappointment, all interpersonal aspects. The person who communicates this performance-appraisal-related commentary, usually the first line manager, is especially important in individuals' fairness perceptions of this dimension. To the extent that individuals perceive themselves as being treated respectfully, they will perceive performance appraisals as more fair.

Proposition 7 *Both informational and interpersonal dimensions of interactional justice are important in determining performance appraisal fairness perceptions.*

Compensation

Pay satisfaction has been shown to be a multidimensional construct involving four elements of pay (level, increase, structure, and administration) and an element of benefits (Heneman & Schwab, 1985). Researchers continue to question the correct number of pay dimensions, agreeing only that the division between pay level and benefits is psychometrically sound (Tremblay, Sire, & Balkin, 2000). We also use this distinction, dividing pay and benefits into two separate sections, and focus primarily on the first two types of pay. Pay level involves the base compensation given to employees. Pay increases are adjustments in compensation given to employees as a result of cost of living, market competition, or merit considerations.

Much of the existing work on pay and justice relates to pay level and pay increases (Tremblay et al., 2000). For this reason, we focus mainly on these two pay dimensions. Within these two dimensions, researchers have primarily focused on pay satisfaction and distributive justice in the form of equity.

Distributive justice

Fairness research leads us to expect that the distributive method used to allocate compensation will impact employees' fairness perceptions. Depending on the circumstances, the distributive methods of equity and equality are perceived as fair. On a practical level, the widespread use of equitable distribution methods (e.g., paying employees based on skills, performance,

etc.) supports the importance of equity. Early studies of pay focused on the impact of the (in)equitable distribution of pay (e.g., Austin & Walster, 1974), and results showed that individuals equitably rewarded were more content than those who were over-rewarded or deprived. There is also research indicating that for some individuals and in some situations, equal pay distribution is considered fair. For example, early work by Schmitt and Marwell (1972) found that inequitably paid student group members, when given a chance, would reallocate money more equally, a finding supported by multiple other studies (e.g, Leventhal, 1976; Yuchtman, 1973). Yuchtman's (1973) results support the use of equality in that personnel managers of small factories and the factory workers often had different perceptions of pay allocation fairness; personnel managers preferred equity-based allocation, but factory workers preferred equality-based allocation of pay. Folger et al. (1995) directly compared individual preference for equity and equality by reviewing student discussions about paying interdependent work team members that were focused on the same goal of group performance. They report that equity tends to be favored by students focused on individual initiative and overall productivity (i.e., no freeriding), whereas students favor equality when focused on norms that encourage cooperation as a means to group success. The widespread use of pay grades also suggests a common acceptance of the equality principle. Taken in conjunction, this research suggests that equity and equality are relatively important distributive aspects for pay. In contrast, there is a lack of research on pay based on need (Tremblay et al., 2000). This leads us to the following proposition.

Proposition 8 *For compensation allocation, distribution based on equity or equality will be judged as fair, with the relative influence of either depending on the characteristics of the situation, the allocation decision, and individual differences.*

Procedural justice

When investigating pay, researchers have dealt with procedural justice in various ways. Regardless of how it is defined, procedural justice perceptions account for a large amount of variance in pay satisfaction (Weiner, 1980). With respect to compensation, research suggests that consistency and voice are important. For example, Mulvey (1992, cited in Tremblay, Sire, & Pelchat, 1998) found that consistently applied *pay* procedures increased satisfaction. Research also indicates that voice in the form of appeals is an important aspect for pay increases (Folger & Konovsky, 1989), suggesting that voice is also an important aspect of individuals' compensation-related fairness perceptions. This leads to the following proposition.

Proposition 9 *For compensation, consistency is an important principle is setting pay levels and voice is important with pay increases.*

Interpersonal and informational justice

Paychecks usually arrive in the mail or, more commonly now, are directly deposited into employees' bank accounts. For this reason, pay is, to a large extent, not interpersonal in nature, and, therefore, the interpersonal justice of pay is likely to be relatively less important than with other HR decisions. However, pay-related information is important. For example, employees often question what types of additional money are being withheld from their paychecks. Existing evidence supports the importance of informational justice in pay, as research shows that understanding how pay raises are determined explains additional variance in pay satisfaction (Tremblay et al., 2000). This leads us to make the following proposition about interactional justice forms and compensation.

Proposition 10 *For compensation, informational aspects are more important than interpersonal aspects in generating perceptions of pay fairness.*

Benefits

Benefits may include healthcare, pension plans, personal, family, and sick leave policies, recreation centers, daycare centers, and subsidized travel or living arrangements. Benefits have received an increasing amount of attention in the literature in recent years, especially in the areas of flexible benefit plans (Barber, Dunham, & Formisano, 1992) and family-friendly benefits (e.g., maternity leave, Grover, 1991).

Most of the existing work on fairness perceptions of benefits has been conducted by Tremblay and colleagues (e.g., Tremblay et al., 1998, 2000), and involves the influence of perceived justice on benefit satisfaction. This work, which focuses mostly on distributive and procedural justice, highlights the importance of individuals' fairness perceptions of organizational benefits.

Distributive justice

Existing studies suggest that employee perceptions of distributive justice are important for benefit satisfaction (e.g., Davis & Ward, 1995; Martin & Bennett, 1996), and that the equality rule plays an important role in benefits (Tremblay et al., 1998). For example, Tremblay et al.'s (1998) results suggest that the more comparable an employee's benefits are to a referent other's benefits, the greater the employee's satisfaction with his or her benefits. Generally, research related to the need aspect of distributive justice is lacking with the exception of recent work on family-friendly benefits (e.g., maternity

leave, flexible scheduling). Grover (1991) suggests that the typical distribution of these benefits is both equality-based and need-based, with fair distributive justice perceptions resulting when *all* individuals who need the benefits receive an equal portion of these benefits (e.g., every new mother gets a month of maternity leave). Congruent with this, Grandey's (2001) work on family-friendly benefits suggests that most individuals do perceive family-friendly benefits given out based on need to be fair; however, she does propose that several groups of employees will not perceive need-based allocation as fair (e.g., non-users who feel put out by users). Tremblay et al. (2000) also included a need-based measure of distributive justice in their study of benefit satisfaction. Results show that need was a better predictor of benefit satisfaction than equity. In fact, benefits are rarely distributed based on equity in the real world. These results suggest that employees often perceive equality as the fairest way to allocate benefits, with need also being salient for some specific benefits.

Proposition 11 *Benefit allocation will be perceived as more fair to the extent that benefits are distributed equally, with need being an additional relevant distributive rule for some family-friendly benefits.*

Procedural justice

Multiple studies suggest that voice may be the most important procedural element in benefit satisfaction (Mulvey, 1992). Generally, these studies have focused on the extent to which employees' are able to appeal benefit decisions (Mulvey, 1992). Another important voice aspect includes the extent to which employees are able to select their own benefits; however, several studies show no difference between employees who select benefits (i.e., have flexible benefits plans) than those who cannot select benefits in employees' satisfaction with benefits (Tremblay et al., 1998; Williams, 1995). One possible explanation for this is that employees under traditional benefits plans feel that their employers are taking account of their preferences (Tremblay et al., 1998). If this is the case, employees already feel their voice is being heard. The consistency of benefits is also important; individuals expect benefits will consistently be available to them over time and that the process used to obtain benefits will be the same for all individuals. Outrage is commonly expressed when benefits are reduced or choices are limited. In contrast to voice and consistency, accuracy may be less important in individuals' benefit-related fairness judgments. This leads us to the following proposition.

Proposition 12 *For benefits, salient procedural aspects include voice and consistency, such that violations of these aspects are perceived as unfair.*

Interpersonal and informational justice

Unfortunately, information regarding the role of interpersonal justice in benefits perceptions is lacking. However, this is somewhat understandable. Benefits and the process by which they are allocated are organizational decisions, not managerial decisions. For this reason, interpersonal interaction regarding benefits is probably limited. For example, an employee may call the HR department with a question about benefits; however, most likely the information given in response to the question will be more important than the respectful nature in which the information is given. If an HR representative is rude or inconsiderate when dealing with a benefits issue, this will reflect on the HR department, but not on the benefits policy.

Informational justice is important for benefits. Tremblay et al.'s (1998, 2000) results show that accurate communication of benefits, a form of informational justice, is important. Generally, the more information employees have concerning benefits, the more satisfied they are with their benefits (Davis & Ward, 1995; Mulvey, 1992; Williams, 1995). For example, Dreher, Ash, and Bretz (1988) show that employees receiving precise, accurate benefit-related information are more satisfied than employees who receive no information. Tremblay et al. (1998) provide one possible reason for the importance of informational justice: more information about benefits may decrease employees' expectation–perception gap (Danehower, Celuch, & Lust, 1994). Taken together, these empirical findings show the importance of informational justice in benefits perceptions. This is summarized in the following proposition.

> **Proposition 13** *For benefits, informational justice is more important to perceptions of benefit fairness than interpersonal aspects.*

Layoffs

Termination can involve many forms of voluntary or involuntary employment separation. In reviewing termination, we focus our attention on layoffs. Layoffs involve a temporary or permanent non-voluntary termination of one or more employees for any of a number of reasons (e.g., economic downturn, restructuring, plant-closing, Downs, 1995).

Layoffs evoke strong justice reactions and, consequently, have been extensively studied by justice researchers. Brockner and colleagues have provided multiple examples of the relationship between fairness perceptions and layoffs and have demonstrated that fairness is a salient concern for both layoff victims and survivors (e.g., Brockner, Grover, Reed, DeWitt, & O'Malley, 1987; Brockner et al., 1994; Konovsky & Brockner, 1993).

Distributive justice

Distributive justice in the layoff context generally focuses on 'who is laid off and what they are given' (Gilliland & Schepers, 2003, p. 61). Usually equity is used to determine who will be laid off and either equity or equality is used to determine what employees are given. For example, equity is used to determine which employees will be laid off when organizations use performance and other indicators of contribution to make layoff decisions. In terms of layoff packages, employees are frequently aware of what others are given and, therefore, equality would appear to be a central concern. This leads to the following proposition.

Proposition 14 *In the layoff context, equity is the most salient distributive principle in deciding who is to be terminated and equality is more salient when evaluating layoff severance packages.*

Procedural justice

Certainly basing layoffs on accurate information and conducting them in a non-biased fashion that is both ethical and moral is important, making accuracy important in the layoff context. With respect to the consistency aspect of procedural justice, many organizations use quantitative formulas to make layoff decisions. These formulas, based on worker characteristics, such as job tenure, performance ratings, and absentee records, make layoffs more consistent (Gilliland & Schepers, 2003). More consistent layoffs are judged as fairer. Of the three aspects of procedural justice, voice is seemingly less important in the layoff context as people do not expect to get a say in whether or not they are terminated. Given the nature of the decision, voice is often impractical. This leads to the following proposition.

Proposition 15 *For layoffs, the most salient procedural justice aspects are accuracy and consistency.*

Interpersonal and informational justice

In layoffs, the first-line manager is often the individual who hands down layoff decisions to individuals (Gilliland & Schepers, 2003), and employees' commitment to the employing organization is influenced by the extent to which they perceive layoffs as fair (Brockner et al., 1987). Therefore, it is the interpersonal and informational fairness of these managers that is of particular importance. Research shows that layoff victims' and survivors' attitudes and behaviors are less negatively impacted by layoff decisions when these decisions are explained in a more thorough and sensitive manner (Brockner et al., 1994), showing the importance of interpersonal

justice. Some experimental evidence suggests that interpersonal justice is more important than informational justice in layoffs: Brockner et al. (1994) found that interpersonal treatment better predicted victims' organizational trust and support than did advanced notice, a form of informational justice. However, existing literature also supports the importance of informational justice in layoffs. Elements including two-way communication (Bies & Moag, 1986; Konovsky & Brockner, 1993), providing advanced notice of the layoff (Konovsky & Brockner, 1993; Konovsky & Folger, 1991; Brockner et al., 1994), the manner in which information is communicated (Konovsky & Brockner, 1993), and explanations provided for the layoff (Brockner et al., 1994) are important informational elements in individuals' fairness perceptions of layoffs.

Proposition 16 *Both interpersonal and informational justice dimensions are important in layoff situations.*

Summary

The distributive, procedural, interpersonal, and informational justice principles that are most salient for different HR functions and decisions are summarized in Table 4.1. As can be seen, equity is a salient distributive principle for most HR decisions, with the exception of benefits, for which equality and need are more salient. Equality is also relevant in compensation and layoff situations.

Procedural justice concerns for accuracy are salient when evaluations are used to make HR decisions such as with selection, performance appraisals, and layoffs. On the other hand, with compensation and benefit functions, voice and consistency are more critical than accuracy. Consistency is also

Table 4.1 HR policies by justice type.

	Justice type							
	Distributive justice			Procedural justice			Inter-personal	Informa-tional
Justice-type aspect	Equity	Equality	Need	Accuracy	Voice	Con-sistency		
HR policies								
Selection	+	—	—	+	+	—	+	+
Performance appraisals	+	—	—	+	+	—	+	+
Compensation	+	+	—	—	+	+	—	+
Benefits	—	+	+	—	+	+	—	+
Lay-offs	+	+	—	+	—	+	+	+

salient in layoff decisions. Interestingly, voice is valued in most HR decisions with the exception of layoff where voice is typically impractical.

Our review suggests that informational aspects are valued in all HR decisions. In fact, this is the only justice principle that crosses all the HR functions we have examined. Interpersonal aspects are important in those HR areas that are handled by managers (i.e., selection, performance appraisal, and layoffs) but less important for organization-level functions (i.e., compensation and benefits). We now discuss some practical and theoretical implications of this analysis.

BOUNDARY CONDITIONS

There are several important variables that should be considered because they may influence the proposed relationships among types of distributive, procedural, interpersonal, and informational justice and the HR dimensions. These variables include environmental uncertainty, culture, differences in job type, and the temporal relationship between HR dimensions discussed.

Existing literature suggests that, in times of environmental uncertainty, existing norms related to the use of facets of distributive, procedural, and interactional justice may be unsettled: in stable conditions, well-established groups may show a rather monolithic view of justice, but that these groups, in times of uncertainty, may view facets of justice very differently (Folger et al., 1995). More concretely, under good economic conditions, layoffs will be minimal and employees may all agree that deciding who to lay off (i.e., layoff victims) based on performance (equity) constitutes a fair decision process. Alternatively, under poor economic conditions, many more layoffs are likely to occur. If this is the case, employees with better performance records may still feel performance (equity) is a fair decision tool; however, those with moderate to poor performance records may prefer retaining employees who have more seniority or based on need.

Culture may also alter proposed justice aspect–HR dimension relationships. For example, the extent to which a culture is individualistic vs. collectivistic may change the extent to which individuals view distributive aspects of equity and equality as fair. Predictions made in this chapter should be made with caution in non-individualistic cultures. For example, cross-culturally, equality in collectivist cultures is found to be more common (Miles & Greenberg, 1993), suggesting that equality in these cultures may also be perceived as fairer. Therefore, even though we have suggested that equitable distribution of pay is generally perceived as fairer, in collectivist cultures equal distribution of pay will probably be seen as equally, if not more fair.

Differences in job types are also expected to alter the importance of justice aspects. Most likely, this is because employees in different job types are likely

to hold different expectations about justice aspects. For example, white-collar employees may expect severance packages to be given based on equity, whereas factory workers (especially those that are unionized) may expect severance to be allocated equally among those laid off. If this is the case, the white-collar workers will perceive equity allocations as fairer than equality allocations, but the factory workers will perceive equality allocations as fairer than equity allocations.

Finally, it is possible that justice in some HR policies is predictive of perceived justice in others. As Greenberg (1986a) notes, performance appraisal may be viewed as an end in itself or as a step toward gaining a promotion or pay raise. Greenberg terms the difference between performance appraisal that leads to another outcome a penultimate outcome, and performance appraisal that is an end state itself an ultimate outcome. This differentiation is also possible for other HR dimensions. For example, Gilliland and Schepers (2003) suggest that pay, benefits, work schedule, and performance appraisal reactions may be predictive of layoff reactions. When viewed in this fashion, these HR dimensions are penultimate outcomes leading to layoffs. However, it is also possible to view pay, benefits, work schedule, and performance appraisal as ultimate outcomes. Further work is required to fully understand this temporal relation between HR dimensions and how the terminality of individuals' evaluations of the dimensions influences their fairness judgements of the dimensions.

IMPLICATIONS

The central theoretical suggestion made in this chapter, that individuals think differently about fairness aspects depending on HR dimension, is at odds with the common method of discussion about organizational justice, mainly in terms of justice types. However, it is congruent with existing theory. Folger et al. (1995) suggested an individual-level distributive justice model, the S-A-N framework, that describes a person's identity in terms of how the person is 'like Some other people, like All other people, (and) like No other person' (quoted from Folger et al., 1995; paraphrased from Kluckhohn, Murray, & Schneider, 1953, p. 53). In essence, the S-A-N framework forms a continuum containing equity, equality, and need, respectively. This framework is congruent with the suggestion we make—that individuals perceive different aspects of distributive justice as more or less important depending on the context.

With respect to human resource actions, there are times that people want to be like some people. For example, people want recognition in the form of a promotion, suggesting we are like some others on favorable aspects such as motivation. Alternatively, sometimes people want to be like all other people in a certain group (often based on who they are rather than accomplish-

ments). For example, members of a sales team may prefer getting equal bonuses to other sales team members.

There are also times when people want to be unique from other individuals. With respect to human resource issues, individual needs require unique treatment. This is the case where a worker requests extraordinary benefits such as paid leave to take care of an elderly relative. Although this theoretical framework is oriented toward distributive justice, it may also be possible to adapt it to fit the context-dependent importance of procedural, informational, and interpersonal justice aspects. For example, consistency reflects a procedural justice desire to be treated like all others.

Theoretically, the current chapter, and related work such as the S-A-N framework (Folger et al., 1995), contend that it is important to think about fairness judgements in a more context-specific way. This is not to say that an individual's fairness judgements about a specific HR function are not related to other fairness judgements. In discussing the variance left unexplained in their layoff-related findings, Gilliland and Schepers (2003) suggest that the fairness of other types of HR practices (e.g., compensation, performance management) may predict justice during a layoff.

We suggest that informational justice is important for all HR functions. It is possible that a cross-cutting rule is that more information is always better. However, it may be that informational justice does vary in important ways across HR functions, but this variance is seen in the type of information that is communicated (e.g., apologies, justifications, explanations). Although there is not yet a widely accepted set of principles or dimensions of informational justice, if we identified these dimensions, we may see interesting variation across HR decisions. Consider the fact that procedural justice is important for all HR functions, but the variation across decisions comes in the dimensions of procedural justice that are most salient. It is possible that we have missed some important variance in our analysis of informational justice. Future research should consider the dimensionality of informational justice.

To fully understand the importance of aspects of each justice type in different HR contexts, careful measurement of these aspects is necessary. Currently, the most commonly used measure of justice (Colquitt, 2001) provides validated items used to measure each of the four justice types. Just as existing pay satisfaction scales were subsequently divided to include multiple types of pay satisfaction (Heneman & Schwab, 1985), Colquitt's measure may be further divided to measure different HR dimensions. It may also be necessary to create several new items so that each justice aspect is measured by multiple items for different HR dimensions. If this is the case, we encourage researchers to return to existing literature to derive these items. Further validation of these new items would provide a modified version of Colquitt's common scale for use by all researchers.

The use of this new measure should help to broaden the interpretation of results if the focus of current research on the distinction among justice types is any indication. However, this alone will not result in an HR function interpretation of justice results. Past research and its focus on justice types seem to dictate the categorization of HR-related justice findings. Many of the studies related to organizational justice investigate participants' perceptions of organizational fairness with respect to a certain type of human resource action. These actions reflect the major HR functions (e.g., hiring, pay, and termination). Whereas most justice researchers are careful in the generalizations that they draw from a particular study, fairness findings are often generalized across HR functions. We encourage researchers to break away from a purely justice-type categorization of these findings by taking care not to generalize findings from one HR dimension to others and to further assess whether existing findings in one HR dimension hold up in other dimensions.

The differing importance of fairness aspects in HR functions also has several practical implications. First, the tendency of employees to think about different fairness aspects for hiring, performance appraisal, compensation, benefits, and termination separately (rather than thinking about justice aspects equally, regardless of the HR function), as proposed here, suggests that for organizations to reap the benefits related to employees' perceptions of fairness, organizations must strive to make multiple HR functions fair. And, this fairness takes different forms in different areas. Rather than the 'one size fits all' advice that is commonly found in popular management books, our analysis suggests that managers must understand the different bases of fairness for different management decisions. It is also not enough to worry about employees' perceptions of selection fairness and assume that if incoming employees perceive the organization as fair that these fairness perceptions will carry over to compensation or benefits.

A second practical implication involves the role of managers in HR functions. Where pertinent, we have highlighted the greater importance of managers in implementing some HR functions (e.g., performance appraisals, layoffs) and lesser importance of managers in other HR functions (e.g., pay and benefits). It would behoove organizations and managers themselves if managers focused on aspects over which they have greater influence on fairness perceptions. To the extent that managers can enhance fairness perceptions in these areas, they may be seen themselves as fairer managers.

The current chapter provides the foundation to empirically assess the implications of these limitations for the importance of justice aspects in HR functions. Whereas we offer specific propositions about the importance of distributive, procedural, interpersonal, and informational justice aspects for the HR functions of hiring, performance appraisal, compensation, benefits, and termination, the basic framework presented in this chapter allows for further work related to other justice aspects or HR functions. We encourage

researchers to break out of the traditional justice-type framework and conduct such research.

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Chapter 5

CONTRIBUTIONS OF INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY TO SAFETY IN COMMERCIAL AIRCRAFT

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> 'Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect.'
>
> Capt. A. G. Lamplugh
> British Aviation Insurance Group, London
> *Ca* early 1930s

A chapter examining the role of industrial/organizational (I/O) psychology in the aviation industry can be approached from one of two basic stances. The topic can be addressed using a 'broad but shallow' approach, giving an overview of occupational psychology (e.g., military aviation, commercial aviation, or ramp operations). Or, the topic may be approached from a 'narrow and deep' perspective (e.g., the role of occupational psychology in training military fast-jet pilots). This chapter falls between the two, restricting its focus to contemporary issues in the safe operation of commercial aircraft.

Safety is paramount in the operation of airliners, although other organizational pressures aimed at enhancing economic performance significantly influence this goal. Aviation is also a safety-critical industry and, hence, it is highly regulated. The vast majority of these regulations prescribe a minimum standard of safety. To complicate matters, commercial aviation is an industry that involves international regulation. It is this complex regulatory structure that is one of the prime shapers of the manner in which I/O psychologists in the aviation industry go about their job. These rules often constrain what is feasible. The societal expectations to deliver a safe, economical, and efficient product also cannot be overlooked. Hence, the complexities

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in airline operations are therefore reflected in the organization and content of this chapter.

The human contribution to enhancing aviation safety does not fall into the neat pigeonholes. To provide some structure, we have organized this chapter using a sociotechnical systems framework. This structure better reflects the organization and operation of an airline and makes clearer the divisions of responsibility (and the influencing factors) that affect airline operations. The framework used is the Five Ms model (Harris & Smith, 1997; Harris & Harris, 2004).

As a final caveat, it must be appreciated that aviation safety is a requirements-driven, *not* a theory-driven, process. These requirements are derived from the regulatory demands and from a broader need to operate safely and efficiently. Thus, we are often a user of theory rather than a generator of theory. Theory is often only generated in retrospect after the operational problem has been addressed.

HUMAN ERROR AND SAFETY IN COMMERCIAL AVIATION

For the past 50 years there has been a general decline in the commercial aircraft accident rate. However, during the last decade the serious accident rate has remained relatively constant at approximately one per million departures (BCAG, 2000). With the projected increase in the demand for air travel, if this rate remains unchanged by 2015 there will be one major hull loss per week. As the reliability and structural integrity of aircraft has improved, the number of accidents directly resulting from engineering failures has reduced dramatically. However, human reliability has not improved to the same degree. Figures vary, but it is estimated that up to 75% of all accidents have a major human factors component. Human error is now the primary risk to flight safety (CAA, 1998c).

The captain of a modern airliner is now a manager of flight crew and complex, highly automated aircraft systems. While high levels of automation have offered considerable advances in safety over their 'clockwork cockpit' forbears, 'new' types of accident began to emerge. Woods & Sarter (2000) have described the 'going sour' accident, where the aircraft is managed into an accident by its crew, often as a result of a series of poor decisions and wrong assumptions. The Federal Aviation Administration (FAA) has become concerned with 'design-induced error' as a result of a series of accidents such as the Nagoya Airbus A300-600 (MoT, Japan, 1996), the Cali Boeing 757 accident (Aeronautica Civil, 1996) and the Strasbourg A320 accidents (DGAC, 1993). For further discussion see the FAA report on the *Interfaces between Flightcrews and Modern Flight Deck Systems* (FAA, 1996). What is emerging from the endeavors of I/O psychologists, though, is

a better understanding of the etiology of human error and ways to either prevent it, trap it, or mitigate its consequences.

THE FIVE Ms MODEL OF SOCIOTECHNICAL SYSTEMS

The operation of an airliner is more than the integration of pilot (hu*man*) and aircraft (*machine*) to perform a particular flight (or *mission*) within the constraints imposed by the physical environment (*medium*). This approach, as expounded by Edwards (1972) in his SHEL model of ergonomics (Software, Hardware, Environment, and Liveware) needs extending to take into account the societal environment in which the task is undertaken (a further aspect of the *medium*). In commercial aviation, the role of *management* also needs to be considered. This Five Ms system approach is extended and adapted from the system safety model of Miller (1988).

The (hu)*man* aspect of the Five Ms approach encompasses such issues as the size, personality, capabilities, and training of the end-user. Taking a user-centered design approach, this system component is the ultimate design-forcing function. The ergonomist has to operate within core abilities of this human operator. The (hu)*man* and the *machine* components come together to perform a *mission*. It is usually the *machine* and *mission* components on which product developers fixate. However, these designers must not only work within the bounds of the technology and the physical aspects of the *medium* in which the task is undertaken, but also by the rules and norms of society (societal aspects of the *medium*), and the capabilities of the end-users. This notwithstanding, the performance standards for human–machine systems are primarily determined by societal norms (regulations); for example, the level of safety required or the minimum standard of user competence. *Management* must work within these rules. The *management* aspect also prescribes secondary performance standards through the selection and training of personnel or the required technical performance of equipment. It is the key link between the (hu)*man*, *machine*, *mission*, and *medium*. It plays the integrating role that ensures compliance with the regulations and promotes safe and efficient operations.

The interrelationships between the five Ms can be demonstrated in a simple diagram (see Figure 5.1). In the case of an airliner, the pilots fly the aircraft to achieve a well-defined goal. The cabin crew also have a designated safety role. This exemplifies the union of (hu)*man* and *machine* to perform a *mission*. The *management* tasks this *mission* and is responsible for ensuring that the crew and aircraft conform to the regulatory requirements and the aircraft is capable of enduring the physical demands placed upon it by the aeronautical *medium*.

The contributions from I/O psychology to enhancing flight safety are described in the following subsections, each relating to an aspect of the

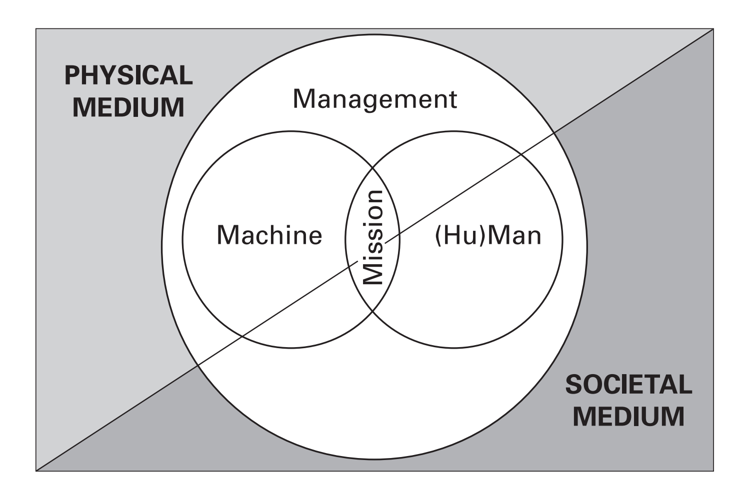


Figure 5.1 The Five Ms model.

Five Ms model, starting at the middle, working outward, and emphasizing the use of a coordinated, system-wide approach.

FIVE Ms IN THE AIRCRAFT

Mission

The *mission* of the crew in a commercial aircraft is a simple one: to deliver their passengers at the greatest possible speed and comfort while maintaining the highest possible standards of safety and economy. Therein lies the catch. Regulatory objectives are specifically aimed at enhancing safety. Organizational aims also need to balance safety against performance, comfort, and economy.

The role of the pilot has changed considerably over the past five decades. No longer are they a 'stick and rudder' flyer. They are now supervisory controllers of complex, highly automated systems. The captain is the senior manager of all the human resources in the aircraft (see Billings, 1997). These changes in role, the nature of the machines they fly, and the way that their mission is accomplished have often not been reflected in the management practices employed and the regulatory framework. Regulation always lags behind technical innovation and commercial practices. Only one part of the mission of the cabin crew is to provide customer service. Their primary role, from a regulatory perspective, is to ensure passenger safety (see CFR, 2003, *Parts 121.391 and 125.269*). This section examines mission demands and their effects on flight crew.

(Hu)Man

The (hu)man component in this treatise is mostly about the disciplines of selection and training, and the occupational stressors unique to the aviation industry. Sloane and Cooper (1986) and, more recently, Stokes and Kite (1997) cover extensively the effects of stressors in the aerospace industry. Caldwell and Caldwell (2003) have recently published a volume on fatigue. More extensive treatments of issues related to pilot selection can be found in works such as Hunter and Burke (1995), Pohlman and Fletcher (1999), or Carretta and Ree (2003). On the topic of pilot training, including the vast and vitally important area of simulation, the reader is referred to contributions from authors such as Farmer, van Rooij, Riemersma, Jorna, and Moraal (1999); Kaiser and Schroeder (2003); Moroney and Moroney (1999); Patrick (2003); and Telfer and Moore (1997). The emphasis in this chapter is firmly on what is often described as 'non-technical' training—training aimed at the management of the human resources on board aircraft.

Stressors

There is no such thing as a typical flight, hence the problems and challenges faced by aircrew are complex, manifold, and vary widely in nature. For example, the pilot of a short-haul airliner may fly up to eight sectors (take-offs and landings) in busy airspace in a single working day. Most of the time will be devoted to the high-workload phases of departure, approach, and landing, and the turnaround on the gate. Gander, Graeber, Foushee, Lauber, and Connell (1988) suggest the problems associated with this type of flight are twofold: irregular hours of work and high workload from the large number of sectors. Recent work by Bourgeois-Bougrine, Cabon, Mollard, Coblentz, and Speyer (2003) showed that sleep before morning flights was significantly shorter than sleep taken before afternoon flights. This reduction was further associated with pilots flying morning flights experiencing higher levels of fatigue compared with pilots conducting afternoon flights. Long-haul pilots may fly only one sector every three days, but will experience prolonged work underload during extended periods in the cruise, flights of 16–17 hours, disturbed sleep and eating patterns from time-zone changes, and lengthy separations from family and friends (see Cabon, Mollard, Coblentz, Fouillot, & Speyer, 1995; Graeber, 1986). Cooper and Sloane (1987) observed that pilots may be able to rest (from a physical perspective) when away from home, but not relax psychologically. Such factors lead to poor performance on the flight deck, increased likelihood of air traffic incidents, health complaints, and lowered levels of psychological well-being (e.g., Haugli, Skogstad, & Hellesoy, 1994; Loewenthal et al., 2000; Winget, DeRoshia, Markley, & Holley, 1984).

To compensate for the effects of jetlag, all airworthiness authorities have strict duty time limitations. A survey of these regulations by Cabon, Bourgeois-Bougrine, Mollard, Coblentz, and Speyer (2002) identified 13 factors used in determining the rest periods between flights (e.g., number of legs flown, reporting time, adjustment to local time, duration of legs). However, no country uses more than 11 of these criteria, and some use very few (only two or three). These duty time regulations highlight the conflicting requirements of safety and performance. Whereas safety would be enhanced with more rest after crossing time zones, this is economically wasteful. It requires more crew to be employed to relieve those on stopover, and the airline also has effectively to pay crew for doing nothing, while also covering their accommodation costs! Long stopovers may further contribute to stress by increasing the length of separation from family and friends (see Sloane & Cooper, 1986 for a more extensive treatment of this topic). Airlines are now actively promoting safety by involving pilots' spouses in the management of stress, as they are a major source of social support and a significant factor in their ability to deal effectively with psychosocial stress. However, it is recognized that there are particular challenges faced by both partners in an 'airline marriage' (Karlins, Koh, & McCully, 1989).

The nature of the airline pilot's work can have other effects in addition to fatigue. It has been reported that up to 12% of professional pilots drink alcohol as a means of coping with stressful situations (Sloane & Cooper, 1984). More recent research by CMR (1990) and Ross and Ross (1995) concurs with this figure. These stressors may either be of a personal nature, or a product of work-related pressures. Typical of the latter are worries about company stability, which has been found to be related to stress and depression in pilots (Little, Gaffney, Rosen, & Bender, 1990) and large numbers of last-minute flying schedule changes which are becoming more common as a result of flight crew being used more 'efficiently' (Maxwell & Harris, 1999). Long-haul flight crew commonly reported drinking socially with other crewmembers after flights as a means of helping them to relax, especially when crossing several time zones. All airlines have employee assistance programs to help employees cope with their job-related demands, and by doing so promote safety. Figures are difficult to establish, but in 1983 one US carrier was reported to have over 120 recovering alcoholic pilots (Harper, 1983).

The birth of 'low-cost' carriers has emphasized the need for efficiency. As margins are low on each seat sold, load factors need to be high and turnarounds need to be swift. Furthermore, crews need to be utilized to the maximum, resulting in stress and fatigue (Bennett, 2003). As low-cost carriers have taken market share from larger carriers, the major airlines have also needed to react and begin to operate in a similar manner. There has also been a raft of acquisitions and mergers in the industry. This has also promoted stress levels in both pilot and cabin crew populations, stemming from issues

such as uncertainty in employment, new management practises, and pre-merger 'group' memberships (Terry, Callan, & Sartori, 1996).

The effects of repetitive sectors, operating across many time zones, working unsociable hours, and being separated from family and friends are only a few aspects of the mission that impact on humans in the system. Commercial aviation is a safety-critical industry and the demands of having to constantly achieve high levels of performance are themselves wearing. The majority of crew training is aimed at emergency and abnormal situations. Flying is 99% boredom and 1% sheer terror. The economic medium has made a significant transformation in the operation of airlines. Nevertheless, the broader mission remains the same.

Selection

The vast majority of studies of aircrew selection have been undertaken for military rather than commercial pilots (Carretta & Ree, 2003). Airlines have tended to rely on the military for producing trained pilots; however, this trend is changing due to the downsizing of the armed forces and increasing retention of their flight crew. In the USA, Hansen and Oster (1997) reported that up to 75% of new-hire airline pilots were recruited after their flying career in military aviation. In Europe, considerably more 'pilots' are selected with little formal training themselves. As a result, there is a great deal of variance in selection methods between the two continents. US carriers rely on techniques that assume candidates are already trained and competent. For example, Suirez, Barborek, Nikore, and Hunter (1994) reported that reference checks, other background checks, and interviews were the most common methods employed, often combined with a flight check. Aptitude and psychometric assessments were not employed, since it was assumed that the candidate's past record successfully demonstrated their ability as a pilot. In Europe, with more *ab initio* trainees, selection emphasizes assessment of the candidate's potential to become a successful pilot. After pre-screening, a typical assessment center for *ab initio* pilot candidates involves personality assessments, tests for verbal and numeric reasoning, tests of psychomotor skill, group discussions, and structured interviews.

There are several reasons the majority of pilot selection studies have been undertaken by the military. The military recruits large numbers of pilot candidates from a large number of applicants; they also keep extremely detailed training records which allows for validation of the selection measures. Commercial operators have a somewhat curious problem. There is often little formal validation of the selection processes in airlines, as selection procedures are deliberately changed and/or updated every year. Many aviation bookshops, especially those that trade on the Internet, carry a range of titles along the lines of 'How to pass your [*insert name of airline as appropriate in here*] selection interview', 'Selection tests used by XXX', 'Questions and

answers for the XXX assessment center'. There is a ready market for such volumes among pilot candidates resulting from the intense competition to gain sponsored training places. For example, in a 20-month period, 5,834 people applied to join the British Airways Pilot Training Scheme. Of these, 2,606 candidates were eligible for selection and were invited to assessment centers, and 307 were subsequently offered places in the training scheme (Rawlins, 2000).

As a result, few studies have been published on the job performance criteria for commercial pilots. Cathay Pacific report using selection criteria in six main areas: technical skill and aptitude; judgement and problem-solving; communications; social relationships, personality, and compatibility with Cathay Pacific; leadership/subordinate style; and motivation and ambition (Bartram & Baxter, 1996). The main point to note here is that flying skills *per se* form only a relatively small component. A similar observation may be made of the Qantas selection criteria (Stead, 1995). For direct entry (fully qualified) pilots, in addition to the required licenses, candidates were required to demonstrate their numeric, verbal, and critical reasoning abilities, pass various psychomotor skills tests, and undergo personality tests to evaluate their maturity and reaction to pressure/stress, adaptability/flexibility, task orientation, crew orientation, and decision-making and command/leadership potential.

Besco (1994) has argued that personality assessments have no utility in pilot selection and are unrelated to skill and performance. Meta-analyses of pilot selection studies suggest that personality is a weak predictor of performance (e.g., Hunter & Burke, 1994; Martinussen, 1996). These analyses are dominated by studies of military aircrew, which may result in a bias towards the assessment of pilots for single-seat aircraft and an emphasis on technical performance in the criterion measures. When criterion measures more closely related to team performance on the flight deck are used, the results are different. In 'early generation' Cockpit/Crew Resource Management (CRM), Chappelow and Churchill (1988) argued that the 'right' personality types were required to promote appropriate social interaction and coordination on the flight deck. However, Besco (1994) contended that breakdowns in CRM were not due to personality clashes but to problems in 'personnel policy, disrespect for "upward communication", non-existent leadership training and exclusive "solo-captain" policies' (p. 25). Empirical evidence suggests that this view is debatable. Hörmann and Maschke (1996) analysed personality data from about 300 pilots, collected on their application for employment, in addition to data from a simulator checkride and other biographical data (e.g., age, flight experience, and command experience). After three years of service, pilots were graded. Below-standard pilots had significantly lower scores on the interpersonal scales and higher scores on the emotional scales of the TSS (Temperament Structure Scale—Maschke, 1987), a scale developed specifically for assessing

aircrew personality. These results supported findings of an earlier review by Chidester, Helmreich, Gregorich, & Geis (1991) who found that better performing airline pilots scored higher on traits such as mastery and expressivity, and low on hostility and aggression. The utility of personality factors depends very much on the choice of the criterion measure applied.

Psychometric tests are now being developed by the US Air Force aimed at identifying pilots who will make effective crewmembers in multi-crew transport aircraft (e.g., Hedge et al., 2000). These are based in situational judgement tests which present the respondent with a series of job-relevant situations and ask them to respond with the most appropriate course of action. Initial results suggest that this approach produces slightly higher validity coefficients than personality tests when assessed against CRM performance.

Non-personality-related selection tests (e.g., verbal and numerical reasoning tests) have shown much larger correlations with performance. This probably reflects the job of the airline pilot, where flight administration and planning is as important as the psychomotor skills required for flying. These measures may all be evaluating a common underlying construct, though. Analysis of US Air Force aircrew selection methods (Carretta & Ree, 2003; Ree & Carretta, 1996) suggests that most of the tests measure some aspect of general ability ('g'). In a battery of 16 psychometric tests (see Skinner & Ree, 1987) measuring a range of aviation-related abilities—comprising verbal, mathematical ability; spatial ability; and aviation knowledge and perceptual speed—67% of the common variance was accountable by a single underlying construct. Given the nature of the batteries of selection tests used by airlines, it is likely they also measure the same underlying general cognitive ability.

Military selection procedures continue to place emphasis on spatial and psychomotor skills in the evaluation of aircrew candidates (e.g., Burke, Hobson, & Linsky, 1997; Carretta & Ree, 2003; Griffin & Koonce, 1996; Hunter & Burke, 1994; Martinussen, 1996). These tests are reasonably good predictors of training success. Many civil *ab initio* selection programs still use tests of psychomotor skills; however, their main purpose is to maximize the chances of cadets passing the initial stages of flight training in light aircraft, rather than their utility in ultimately selecting good airline pilots.

The most controversial aspect of pilot selection (or de-selection), and one closely associated with safety, is that of psychological testing related to flight crew licensing. The Joint Aviation Authorities (JAA) has the potential to require flight crew to undergo *psychological* assessment (in addition to any *psychiatric* assessment) as part of the class I and class II medical requirements (Joint Airworthiness Requirements, Flight Crew Licensing, part 3: JAA, 1999):

> '*An applicant for or holder of a Class 1 medical certificate shall have no established psychological deficiencies (see paragraph 1, Appendix 17 to Subpart B), which are likely to interfere with the safe exercise of the privileges of the applicable licence(s)*' (JAR-FCL 3.240).

Appendix 17 states:

> '*A psychological evaluation should be considered as part of, or complementary to, a specialist psychiatric or neurological examination when the Authority receives verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, delinquency or knowledge relevant to the safe exercise of the privileges of the applicable licences ... The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and psychological interview.*'

This requirement has provoked considerable debate (e.g., see Goeters, 1995; Johnston, 1996; Murphy, 1995). For example, Johnston puts forward ten problems and risks, including issues such as a lack of reliability and validity in the tests used; only a relatively weak probabilistic association (on an individual basis) with actual performance; no internationally agreed battery of tests to be applied; unintentional (or intentional) abuse of the results; and cultural differences in selection criteria and behavioral norms. The fact that there are cultural differences, and as Johnston also points out, that 'selection does not exist in a social or organizational vacuum' (p. 191) emphasizes the role of the societal medium. However, as the US FAA has yet to adopt the requirement for the psychological assessment of commercial pilots, it is likely that this debate will continue for some time.

Training

Training is of paramount importance in maintaining aviation safety and, for a professional pilot, recurrent/assessment training is also associated with the constant demonstration of required levels of competence. A failure to demonstrate acceptable skill levels may result in remedial training being required, loss of licence, or, ultimately, loss of employment. The provision of training courses and training facilities represents a huge investment for airlines. Depending upon the exact specification, a full-flight simulator approved by the regulatory authorities for training and licensing purposes, equipped with a daylight visual system and six-axis motion platform will cost between $6m and $12m. In a large airline, these may be in use for either the training or assessment of aircrew for over 20 hours per day, 7 days per week. In addition, there are cockpit procedures trainers, other part-task trainers, computer-

based training facilities for aircraft systems and procedures, and regular classroom facilities (see Farmer et al., 1999; Kaiser & Schroeder, 2003; or Moroney & Moroney, 1999). Almost all training facilities and curricula are aircraft-type-specific, as are the assessments required.

The airworthiness authorities regulate heavily the training content and assessment requirements. The interested reader is referred to the regulations contained in CFR (2003, *Title 14, Part 61—Certification: Pilots, Flight Instructors, and Ground Instructors*) and JAA (1999, *JAR-FCL 1: Flight Crew Licensing—Aeroplanes*). Of greater interest are the current debates and trends in flight crew training. It must be noted from the start, though, that any regulation only prescribes the *minimum* training and proficiency requirements and that regulations tend to lag behind technological developments and operational concepts. Furthermore, although regulations still drive a great deal of flight training syllabus design and execution, recent changes in regulatory philosophy (e.g., the FAA Advanced Qualification Program) are allowing greater flexibility in training design and evaluation, and faster reaction to operational requirements (see FAA, 1991, *Advisory Circular AC 120-54*).

Up until relatively recently, pilot training and licensing concentrated on flight and technical skills (maneuvering the aircraft, navigation, system management, and fault diagnosis, etc.). However, with increasing technical reliability, it became evident that the major cause of air accidents was human error. The failure of the flight deck crew to act in a well-coordinated manner has led to a series of intra-cockpit flight crew management programs being instigated (see p. 194 on 'Management' aspects). While regulations dealing with pilots' qualifications still deal with the acquisition and maintenance of individual skills, there is now a mandated requirement for crew concept training as part of the Airline Transport Pilot Licence syllabus. Additionally, airlines now provide regular LOFT (Line Oriented Flight Training) sessions for their crews. LOFT places emphasis on training as a crew and acting as a crewmember. During a session (which takes place in a full-flight simulator) crews fly a trip just as they would in normal operations. However, there are a series of in-flight problems and emergencies that require the pilots to act as a team. During these simulated flights the instructors do not intervene, but crews' actions are recorded for later analysis. After the session, the crews' performance is reviewed with respect to how they handled flying the aircraft, the technical aspects of the problem, and, perhaps most importantly, how the human capital was employed to address the issue (see Foushee & Helmreich, 1988).

The effectiveness of this training approach depends upon two key factors: the development and implementation of the flight scenarios within which the training takes place, and the adequacy with which crews are debriefed by the instructors after the exercise. The FAA publishes guidelines for the development of training scenarios (FAA, 1990, *Advisory Circular 120-35B*). These

were expanded upon and added to by Prince, Oser, Salas, and Woodruff (1993). For any line-oriented training session to be successful, trainees should undergo two briefings prior to their 'flight'. The first briefing should outline the training objectives and how the session would progress. The second would be a regular briefing (route, weather, aircraft serviceability, etc.) to put the flight into an operational context. LOFT scenarios should be designed to address specific training objectives, and the scenarios should be realistic, including such mundane items as flight deck paperwork, tower communication, and the periods of inactivity that characterize many flights. All these factors should enhance the reality of the simulation and help to ensure flight crew 'buy in'.

Hamman, Seamster, Smith, and Lofaro (1993) suggest that the problems faced by the crew in training should begin with the premise that the pilots should be able to exercise both their technical and interpersonal skills. The problems faced should comprise an initiating event, irrelevant occurrences to distract and/or mislead the crew, and other scenario-supporting factors. There should also not be just a single solution to the problem. The role of the facilitator during the debriefing is another key to its training effectiveness. The FAA (1990) suggest that the debrief include a discussion of the positive aspects of the crews' performance as well as the negative aspects. The role of the facilitator in these sessions should not be judgemental. However, Dismukes, McDonnell, and Jobe (2000) observed great variations in facilitator performance. It was noted that the mean debriefing duration of a post-simulator ride (which typically lasted approximately 2 hours) was only 31 minutes. One-third of this time was often spent reviewing incidents on the video and, in the remaining time, the training captain (facilitator) overseeing the session often spent more time talking than did the crew in training. While line training (and associated CRM programs) have been thought to provide great safety and economic benefits to the airlines, this has been difficult to establish empirically (Edkins, 2002). The methods by which CRM programs have been evaluated are covered in more detail in the section on Management (p. 194) issues; however, relatively recently there have been some questions raised about the fundamental basis of LOFT training.

The *raison d'être* of LOFT is to encourage effective flight deck management practices through team-based training and debriefing performed within abnormal and emergency flight scenarios. However, the threats to flight safety faced in such a training session may not be the key threats to operational safety faced by aircrew on a day-to-day basis. Line Operations Safety Audits (LOSAs) began to be introduced to airlines (initially US carriers) in the late 1990s. Audit data are collected on a non-jeopardy basis by trained observers during regular line operations. The initial idea was that these data formed the basis of an audit process to check the everyday safety of an airline at an organizational level. Data in three broad categories are collected: *external threats* to safety (e.g., air traffic controller problems, adverse

weather, or system malfunctions); errors and responses to the errors committed by flight crew, further broken down into categories of the error, response to the error, and the outcome of the situation; and *non-technical skills evaluation*, which evaluates CRM behaviors using a set of behavioral ratings. A fuller description of the methodology can be found in Helmreich, 2000; Helmreich, Klinect, and Wilhelm, 1999; Helmreich, Wilhelm, Klinect, and Merritt; 2001; Klinect, Wilhelm, and Helmreich, 1999). Thomas (2003) compared threats gathered from audit data to threats faced by aircrew in LOFT training scenarios. Almost 70% of the scenarios involved an aircraft malfunction; however, this only occurred in 14% of instances in the LOSA data. The most frequent external safety threat in line operations was weather (almost 21%), but this was incorporated in only 4% of the training sessions. Other external threats to safety, such as operational pressures on crews and other air traffic and ground handling events, occurred in no scenarios at all. It was suggested that the audit data be used to inform scenario development so that the scenarios reflect the everyday safety problems faced by flight crews. Thomas (2003) also observed that crew performance during simulation sessions was considerably superior to that observed when flying on the line, a classic instance of training appearing effective at Kirkpatrick's (1976, 1998) learning level, but failing to transfer effectively to the workplace itself.

Developing training needs directly from line operational requirements reflects the training philosophy outlined by the FAA in the Advanced Qualification Program. The emphasis in the program is away from time-based training requirements to fleet-specific, proficiency-based requirements (see FAA, 1991, *AC 120-54*). In this qualification process, the applicant (not the regulatory authority) develops a set of proficiency objectives based upon that airline's requirements for their specific type of operations. The process is based upon a rigorous task analysis of operations, but with emphasis firmly placed upon the cognitive aspects of the flight task, such as crew decision-making or the management of the aircraft's automation (see Seamster, Redding, & Kaempf, 1998). In many ways, the process is identical to the elicitation of training requirements undertaken in many other industries. The revolutionary aspect of this process in the aviation industry lies in the releasing of the regulatory shackles when approving the content of the training program. However, the complexity of the qualification process means that considerable professional skills and resources have to be applied to the program to gain approval, and there is a likelihood that only the major airlines with such resources will benefit (Maurino, 1999).

While regulations now require professional pilots to undertake multi-crew cooperation courses there has been no such corresponding advance in the training requirements for the understanding and management of advanced automation. It could be argued that this is inherent in any aircraft-type rating (one of the final stages in flight crew licensing); however, some authors are now suggesting that training for automation could start much earlier in a

pilot's education (Rignér & Dekker, 2000). Furthermore, it has also been observed that there is a considerable discrepancy between what pilots are required to know to gain a professional license and what they subsequently need to be able to do to act as a first officer. One such gap is in the management of automation (Dekker, 2000). It has been suggested that automation is not looked upon as a separate 'add-on' issue, but is actually seen as central to the design and operation of modern airliners (Rignér & Dekker, 1999). Any inspection of the avionics architecture of a modern 'fourth-generation' airliner (e.g., Airbus A330/340 or Boeing 777) reveals this to be the case in aircraft design, yet this is not reflected in the training of modern commercial pilots. Rignér & Dekker (2000) call for this situation to be remedied by mapping out the skill and knowledge requirements on a cognitive level and then implementing them, as opposed to updating the training technology and 'making small aeroplanes fly like big ones' (p. 321). Suitable training can only be specified with respect to the characteristics of the aeroplane (machine) and the operating medium. Waiting for regulations for training requirements to keep pace with developments in technology is folly. However, regulations can potentially hold back developments in training, or impose requirements that are no longer valid.

Machine

The machine component is concerned with the ergonomic aspects of the flight deck and aircraft cabin. Ergonomics in commercial aviation is a key area for enhancing safety. It is also central to the systems approach. Training cannot be specified without reference to the design of the equipment nor can the person specification be written for their selection. Furthermore, in the *psyche* of those involved with the aviation industry, flying is all about these machines. There are several textbooks and chapters in textbooks that deal with the design of flight decks (e.g., Billings, 1997; Dekker & Hollnagel, 1999; Harris, 2004; Sarter & Amalberti, 2000), and aircraft cabins (Edwards & Edwards, 1990; Kovarik, Graeber, & Mitchell, 1999). This section highlights some of the contemporary issues associated with this component of the system.

Initial efforts to enhance aircraft safety were aimed solely at system reliability, structural integrity, and aircraft dynamics. The airworthiness regulations governing the design of commercial aircraft (e.g., JAR, 1999, *Joint Airworthiness Requirements [JAR Part 25: Large Aeroplanes]* and CFR, 2003, *Title 14, Part 25: Airworthiness Standards*) still reflect these earlier concerns. However, with significant advances in structures, materials, and system design, such engineering failures are now extremely rare.

During the evolution of the aeroplane over the last century, the skills required to fly one have changed considerably, mostly as a result of advances in automation. Pilots are now supervisory controllers of complex, highly

automated systems (see Sheridan, 1987, 1997), *not* 'hands-on' flyers. These highly automated systems started to be introduced in commercial aircraft during the 'glass cockpit' revolution of the 1980s (when 'traditional' electro-mechanical flight deck instrumentation was replaced with multi-function electro-optical display devices—see Billings, 1997). However, this overt manifestation of the revolution on the flight deck was merely the phenotype. The true transformation in the control of aircraft lay in the covert implementation of system automation, what can be considered as the genotype of the modern airliner.

However, this revolution was not without problems. Accidents with a new etiology emerged, which led to the highly influential 1996 report by the FAA (*The Interfaces between Flightcrews and Modern Flight Deck Systems*). This identified major deficiencies in the human-centered design process and the interfaces themselves. These comments included criticisms of pilots' autoflight mode awareness/indication, energy awareness (i.e., speed/height awareness), position/terrain awareness, confusing and unclear display symbology, a lack of consistency in the interfaces and conventions of Flight Management Systems (FMSs), and poor compatibility between flight deck systems. Comments about the flight deck design process itself included criticisms concerning the lack of human factors expertise on design teams and their lack of authority over the design decisions made. It was reported that the emphasis on physical ergonomics was too great and not enough consideration was paid to cognitive ergonomics. Fifty-one specific recommendations were made, the most far-reaching of which required a change in the aircraft certification rules to include specific consideration of human factors:

> '*The FAA should require the evaluation of flight deck designs for susceptibility to design-induced flightcrew errors and the consequences of those errors as part of the type certification process*' (p. 97).

As a direct result, the US Department of Transportation commenced a large-scale program to review the existing material and make recommendations about human factors certification (US DoT, 1999). For the first time, there will be a specific regulatory requirement for 'good' human factors. However, in attempting to produce such a regulation, it is important to note how the I/O psychologist is bound by existing regulatory structures. Any new 'human factors' rule can only address the fabric of the airframe and its systems, so the new regulation can only aim to minimize the likelihood of error as a result of poor interface design. It cannot consider errors resulting from such factors as inappropriate implementation of procedures, or poor training. These aspects of operations are covered elsewhere in the airworthiness regulations (e.g., CFR, 2003, *Title 14, Part 61* and CFR, 2003, *Title 14, Part 121*). Although this segmentation of the regulations is logical from a regulatory perspective,

from a socio-technical systems viewpoint, which assumes the root causes of human error are often many and interrelated, this does pose some considerable challenges. For example, how can a flight deck be evaluated for its error potential without reference to the skills, knowledge, and abilities of the users (i.e., the pilots)?

The airworthiness regulations must be viewed in a historical context. They evolved from military specifications for the design and construction of aircraft and are organized on a 'system-by-system' basis. This structure was based on architectures with relatively independent systems and a low level of integration, e.g., each aircraft system had its own interface that used analog controls and instrumentation. Airworthiness approval was accomplished by evaluating each individual system to show compliance with the relevant requirement (see Applegate & Graeber, 2001). The 'system-by-system' approach to human factors certification is inappropriate, as human factors engineers design on a 'task-by-task' basis. This task-based approach implicitly crosses the boundaries of many systems, because pilots interact with several systems when performing many flight-related tasks. Many human factors problems lie not *within* an individual system (or single regulation), but *between* systems.

Perhaps the greatest challenge will be in deriving valid and reliable human performance measurement instruments and developing assessment processes upon which certification decisions can be made. In the certification of engineered aircraft components, what is measured is what is being certificated. In human factors assessments, the adequacy of the flight deck interface is inferred from the quality of performance of the assessor (or from their opinion). It is not possible to measure the item to be certificated *per se*, because it is not possible to 'measure' the adequacy of the pilot–aircraft interface itself in the same way that you can 'measure' other engineering components (Harris, 1997).

In the early days of commercial aviation, any passenger fare was pure profit because all costs were covered by mail revenue. The only real consideration was to try and deliver the passenger alive and preferably unharmed (Kovarik et al., 1999). However, marketing and economic considerations in designing a modern aircraft cabin reveal the extent to which this position has changed. Manufacturers aim to design an aircraft interior so that as many features as possible can be adapted to the different requirements of airlines purchasing a single aircraft type, or for when the requirements of a specific airline change. Over the lifetime of a single aircraft, airlines may need to reconfigure the cabin to adapt to market changes in routes, the nature of operations, the type of passenger, and the balance between different classes of travel. In addition, airlines will generally be reluctant to install any non-standard items of equipment, fixtures, and furnishings, since this may reduce the value of an aircraft at resale. However, this ability to adapt and respond to the market has resulted in passengers having an increased range of

air travel options, with perhaps the largest constraint on their choice being willingness to pay.

From an ergonomic perspective, the main users of the aircraft cabin are the passengers and the cabin crew. For passengers, the seat and seating space is of primary importance, particularly on flights of over five or six hours. On flights of lesser duration, a higher degree of discomfort is likely to be tolerated, and this may be one reason why low-cost operations so far have not tested this market. Seating and seat design is often the responsibility of the airline in-flight service department, who are likely to work closely with the marketing department in determining what seating and which at-seat entertainment facilities will be provided. Passenger comfort is known to be related not just to seat dimensions, but to personal space and the loading factor on any particular flight. Passengers prefer to have an empty seat beside them, and by manipulating the seating configuration to optimize the frequency of such occurrences, it is possible to maximize passenger perceptions of comfort (Brauer, 1998). The regulatory requirements relating to seating design are primarily focused on crashworthiness and flammability considerations. One exception is the UK Civil Aviation Authority, which, uniquely among regulators, specifies a minimum allowable distance between seats (CAA, 1989). The required dimensions are currently under review, following a recent passenger survey and ergonomic assessment (Quigley, Southall, Freer, Moody, & Porter, 2001).

While the cabin is used by passengers on a transitory basis, it is the normal working environment for cabin crew. The workspace available will depend on the aircraft type, but is invariably limited, making for a cramped working environment. Specific ergonomic issues depend on the type of service being delivered and the equipment available, but common complaints include lack of headroom, strain from lifting and carrying passenger baggage, and using service trolleys in narrow aisles. In the galley, industry standard units may have worktops that are higher than optimal for a large proportion of the cabin crew and lack of storage space can lead to heavy, bulky, and cumbersome items being stored above head height. Not surprisingly, factors such as these are associated with a large proportion of cabin crew injuries (FSF, 2002). Operators prefer to maintain flexibility wherever possible, because this allows alterations to the style and provision of in-flight service to be made relatively quickly. However, this contributes to the problem of ineffective galley design, because it is difficult to optimize the galley layout for performing a specific function or task, when the task itself may change on a regular basis.

The regulatory requirements for the design and configuration of the aircraft cabin tend to be aimed at the evacuation of the aircraft. A passenger evacuation in an emergency situation is the most telling test for any aircraft configuration designer, since successful completion of a timed evacuation demonstration under simulated emergency conditions is an airworthiness

requirement (FAA, 1989). The adequacy of a one-shot performance assessment such as this has, however, been questioned, especially since advances in computer modeling allow evacuation outcomes to be estimated repeatedly even for novel cabin configurations and future aircraft types, provided that some usability data are available. Such a capability clearly reduces the requirement for human participants to take part in evacuation trials, thereby reducing the risk of injury and cost. However, it does raise the questions of how such models will be validated and whether results will be accepted.

Aviation regulations specify minimum dimensions for a number of cabin features (e.g., aisles and cross-aisles, cabin crew assist spaces, the separation of exits, and different types of exits). Some of these regulations have been developed based on engineering calculations, rather than on an understanding of group evacuation behaviour. For example, various designs and sizes of passenger emergency exits are rated for different numbers of passengers and yet there has been no comprehensive evaluation of whether these ratings are in fact optimal or realistic. In some accidents, limitations in the number of exits available may require that smaller exits are used by a larger number of passengers than had been anticipated. Such considerations are likely to become increasingly important when larger aircraft carrying greater numbers of passengers enter service (Muir & Thomas, 2003).

Management

Within the *management* domain, two subdivisions can be identified: the management of the crew and the management of operations across the airline.

Management in the aircraft

This is the domain of CRM. The evolution of the abbreviation of CRM itself exemplifies the change in culture in commercial aviation in the last 20 years. When CRM was first introduced, the abbreviation stood for Cockpit Resource Management, and applied only to flight deck crew. Subsequently, the concept evolved to encompass all flight crew (i.e., including the cabin crew), and became known as Crew Resource Management. Further evolution of the approach has seen CRM extend beyond the aircraft to ramp operations and maintenance, and even beyond the airline to air traffic control.

CRM has been defined as 'the effective utilisation of all resources (e.g. crewmembers, aeroplane systems and supporting facilities) to achieve safe and efficient operation' (JAA, 1998). CRM evolved as an operating concept after a series of accidents in which the aircraft involved had no major technical failure (if any at all) at the time of the crash. The principal causes of these accidents were failures to utilize the human resources available in an appropriate manner. The most famous of these accidents involved a Lockheed L1011 (Tristar) in the Florida Everglades in 1972 (NTSB, 1973) in

which an aircraft with a minor technical failure (a blown light bulb on the gear status lights) crashed because nobody was actually flying it. All the crew were 'head down' trying to fix the problem. Other accidents highlighted instances of the captain trying to do all the work while other flight crew were unoccupied, or, as in the Staines Trident Accident (DoT, 1973) a lack of crew cooperation as a result of an overbearing and autocratic captain. In this case, the captain effectively discouraged communication and questioning of actions, which eliminated any cross-checking. The aircraft crashed after a series of errors were made, which seemed to go uncorrected.

Both Helmreich (1994a, b) in the USA and Pariés & Amalberti (1995) in Europe have suggested that CRM has progressed through four distinct eras. First-generation CRM focused on improving management style and interpersonal skills on the flight deck. Emphasis was placed upon improving communication, attitudes, and leadership to enhance teamwork. Although first-generation CRM training placed emphasis on teamwork, in many airlines only captains underwent CRM training! Second-generation CRM added instruction in stress management, human error, decision-making, and group dynamics. However, CRM also began to extend beyond the flight deck door. In third-generation CRM, cabin crew became very much part of the team. Training was extended to include whole crews together, rather than training flight deck and aircraft cabin separately. The CRM concept also began to extend into the organization as a whole, embracing further concepts such as national and safety culture. By the fourth generation, CRM training *per se* was beginning to disappear as the concepts were being absorbed into *all* aspects of flight training and the development of flight deck procedures. Helmreich, Merritt, and Wilhelm (1999) suggest that fifth-generation CRM will extend throughout the organization and will basically involve a culture change. Early CRM approaches were based upon avoiding error. Fifth-generation approaches will assume that whenever human beings are involved, error will be pervasive. Emphasis will be on avoiding error, trapping errors, and mitigating the consequences of errors. Organizations will begin to recognize the fallibility of humans under stress. The reporting of errors will be encouraged and promoted using non-jeopardy reporting programs.

In many aspects of aviation research, development of theory lags behind practice, and in this respect CRM is no exception. Helmreich and Foushee (1993) described the facets of CRM in the framework of a generic Input-Process-Outcome model. Features on the input side of the model include aspects of the (hu)man (personality, attitudes, abilities, etc.), the medium (regulations, national culture, operating environment), and other aspects of the company management. Process factors include intra-crew communication, team formation and management, situation assessment/awareness and decision-making (see Van Avermaete & Kruijsen, 1998 for a European

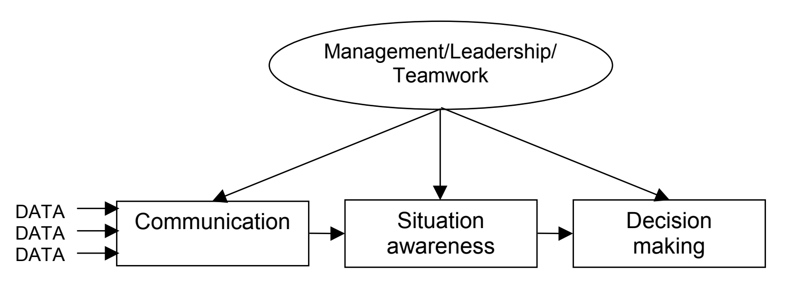


Figure 5.2 Simple model of CRM processes.

perspective on the CRM process factors). Outcome factors evaluate the performance of both the mission and the crew.

Within the context of this discussion, emphasis is placed upon the on-board process factors underlying the 'good' management of flight crew. A very simple model of CRM can be postulated to structure this discussion. Members of the flight deck crew gather data. These data need to be communicated to enhance everyone's situation awareness, which itself is necessary to promote good decision-making, awareness of the decisions made and of the actions subsequently taken. These processes are promoted by good management and teamwork (see Figure 5.2).

The basic building block of CRM is intra-flight deck communication. Many studies have found that crew performance improves with an increase in task-related communication (e.g., Foushee & Manos, 1981; Foushee, Lauber, Baetge, & Acomb, 1986; Kanki & Palmer, 1993). During abnormal situations, though, research findings on the relationship between communication and performance are somewhat mixed. Kanki, Folk, and Irwin (1991) found that the best performing crews in an emergency exhibited homogeneity in their communication patterns. It was suggested that communicating in a highly standardized manner enhanced task performance in these circumstances through increased predictability. One of the same authors later suggested, however, that during abnormal situations the overstandardization of communication protocols can be to the detriment of performance (Kanki & Palmer, 1993). Mjös (2001) observed that in high-pressure situations, informal (but task-related) communication was beneficial in improving crew performance, since this approach contributed to the pilots developing a shared mental model of the situation.

Communication is the basis for decision-making *as a crew*. Indeed, it is often difficult to separate these issues. Huddlestone & Harris (2003) observed that communication was a necessary pre-cursor to promoting team SA. SA is itself the precursor for all decision-making (Lipshitz, 1993; Nobel, 1993; Prince & Salas, 1997). Studies in flight simulators have observed that high-performing crews discussed in-flight problems in greater depth than did crews that performed less well. These crews also used low-workload flight

phases to plan ahead and discuss their options (Orasanu & Fisher, 1992). Furthermore, they issued more utterances related to strategy and planning, and issued fewer commands during an emergency. Nevertheless, although such observations help inform us about the methods used to promote SA, they tell us little about the process of in-flight decision-making itself, other than good communication is a necessary precursor.

O'Hare (2003) noted in a survey of the aviation psychology research literature (O'Hare & Lawrence, 2000) that the study of decision-making was only 15th on the list of topics researched, despite it being central to flight safety. Over the last decade there has been a trend away from a classical decision-making theory-based approach, with its roots in human information-processing and experimental psychology (e.g., Wickens & Flasch, 1988), and a move toward naturalistic decision-making. With this new approach, emphasis is placed upon expert decision-making in real-life situations (see Kaempf & Klein, 1994; Klein, 1989). The potential range of solutions is unconstrained and, as often is the case in aviation decision-making, there is no readily identifiable 'correct' solution to a problem, only a satisfactory or less satisfactory outcome. Perhaps the greatest shortcoming of this new paradigm lies in the analytical methods employed. The majority of naturalistic decision-making models have been developed qualitatively from observation and analysis of experts' decision-making processes. However, its biggest strength is also its greatest weakness. The rich description of the decision-making process precludes any element of quantification or prediction. However, new analytical approaches using neural network analyses may offer a way around this criticism (see Duggan & Harris, 2001).

Orasanu (1993) observed that decisions in the aviation domain are well-suited to a naturalistic approach, as they are often ill-structured and set in a dynamic, time-pressured environment where the consequences of a poor decision can be dire. In many cases there can be conflicting mission goals (e.g., the trade-off between safety and efficiency) which may be the product of personal biases or organizational values (see Reason, 1990). Furthermore, when flying, a decision is not an end in itself; it is merely the precursor to another decision. Finally and of prime importance, there is more than a single individual contributing to most decisions taken (Orasanu & Connolly, 1993).

As far as decision-making on the flight deck is concerned, emphasis has been placed on the development of easily trained decision-making processes. Aviation abounds with mnemonics, and aids to help aircrew adopt an appropriate decision-making strategy are no exception (e.g., DECIDE—Detect, Estimate, Choose, Identify, Do, Evaluate—Benner, 1975; QPIDR—Questioning, Promoting Ideas, Decide, Review—Prince & Salas, 1993; FOR-DEC—Facts, Options, Risks and benefits, Decision, Execution, Check—Hörmann, 1995). Empirical evaluation of these guidelines is sparse, although there is some evidence that their training is beneficial. Jensen (1995) observed that pilots trained in the DECIDE technique performed better than

those without training during a series of assessment flights. Murray (1997) observed a positive attitude among pilots to a campaign promoting decision-making. Goeters (2002) specifically regarded appropriate use of the FOR-DEC decision-making process as evidence of 'good' CRM.

Effective communication and good decision-making skills are of little benefit if crews do not act together as a team under the direction of a leader (i.e., the captain). Unlike military aviation, where aircrew fly together as members of a fixed team, in most airlines captains and first officers rarely fly together as members of a regular crew. The assumption is that this approach avoids 'corner-cutting' and complacency that is occasionally evident in long-established teams, hence every flight has to be conducted exactly to the prescribed standard operating procedures. As a result, quick and effective team-building is essential for flight safety in commercial aviation. The captain sets the 'tone' and is key in making the crew into a team. Ginnett (1993) found that those captains particularly good at establishing effective teams held extensive crew briefings and debriefings before and after each flight. During these briefings they established their credibility as a leader, spelling out the required goals for performance and leading by example, yet at the same time encouraging all crew to be active participants in the management of the flight.

Early studies on flight deck leadership used 'management-style' tools such as Fiedler's (1967) least preferred co-worker approach and Blake & Mouton's (1978) managerial grid. Initially, it was thought that task-oriented captains would produce better crew performance, although group-oriented leaders have also been found to be effective on the flight deck (see Foushee & Helmreich, 1988). By the second generation of CRM, though, the emphasis had changed to training pilots in leadership techniques and group dynamics, rather than trying to describe what makes a good leader and team player. Almost simultaneously, changes in pilot selection criteria began to take place. New-hire pilots were selected on their social and management skills in addition to their technical proficiency (e.g., Bartram & Baxter, 1996; Stead, 1995; Hörmann & Maschke, 1996). CRM skills tests are being developed to further aid in this process (Hedge et al., 2000).

Initially, CRM programs were instigated voluntarily by airlines, although the regulatory authorities eventually mandated the requirement for crew concept-training. Within Europe, the JAA and the UK Civil Aviation Authority require flight crew to be assessed on their CRM skills as part of gaining a professional pilot's licence and in order to retain it during annual licensing checks (CAA, 1998a, b; JAA, 2000, *Joint Airworthiness Requirement—Operations [JAR-OPS]*; and JAA, 1999, *Joint Airworthiness Requirement—Flight Crew Licensing [JAR-FCL]*). The US FAA adopts a different approach. CRM assessment is part of the qualification process in which the carriers themselves set the proficiency objectives. CRM behavioral objectives are identified in categories that either relate to 'enabling objectives' (to prepare

crews for further training) or 'currency items' (activities that crew must remain proficient in, which can be demonstrated through frequent performance rather than regular formal evaluation). Details of the qualification process relating to CRM can be found in FAA (1991, *AC 120-54*). Further description of the differences by which the two approaches to CRM approval differ can be found in Maurino (1999). As previously mentioned, though, evaluation of a crew's performance is a considerable measurement and evaluation challenge.

O'Connor, Flin, and Fletcher (2002) appraised the effectiveness of CRM programs using the four-level framework for training evaluation described by Kirkpatrick (1976, 1998). Twenty-three studies evaluating civil CRM programs were assessed (nearly as many again from military sources were also examined). Almost half the studies utilized a reactions measure to evaluate CRM training, and in all cases crews were found to receive it positively with the exception of one instance (reported by Schiewe, 1995). This was attributed to the method of training delivery. Scenario-based instruction and case studies were well-received, but modules based solely on lectures were not regarded well. Studies of attitudes toward CRM conducted pre and post training have consistently reported a positive change in attitudes (e.g., Gregorich, Helmreich, & Wilhelm, 1990; Helmreich & Wilhelm, 1991). However, in a longitudinal study by Irwin (1991) these positive attitudes were found to decay over time, and only recovered after recurrent training.

Only 15% of studies in the review reported a learning measure at the end of the course. However, a survey of CRM evaluation practises in UK airlines undertaken by O'Connor, Flin, Fletcher, and Hemsley (2002) reported that 36% of companies used this approach, but in the vast majority of cases it was not formalized in any way (e.g., assessments were made informally by instructors during subsequent training simulation sessions). The main reason given for not using formal knowledge evaluations was that it was regarded that the demonstration and application of CRM skills was more important than knowledge of CRM concepts.

A number of studies have evaluated CRM at the behavioral level. Different behavioral rating systems have been developed for these purposes (e.g., see Helmreich, Wilhelm, Kello, Taggart, & Butler, 1990; Van Avermaete & Kruijsen, 1998). CRM behaviors improved as a result of training (e.g., Clothier, 1991; Ikomi, Boehm-Davis, Holt, & Incalcaterra, 1999) and self-report measures suggested that this improvement was maintained six months after training (Naef, 1995). Behavioral observations are commonly conducted by a training captain during the course of normal operations or in a simulator (O'Connor, Flin, & Fletcher, 2002).

As noted earlier the JAA requires the training and assessment of CRM skills as part of the operational regulations (*JAR-OPS*). *JAR-OPS 1.965* requires that:

> *'the flight crew must be assessed on their CRM skills in accordance with a methodology acceptable to the Authority and published in the Operations Manual. The purpose of such an assessment is to: provide feedback to the individual and serve to identify retraining; and be used to improve the CRM training system.'*

At the time of writing the method developed by Van Avermaete and Kruijsen (1998) (called NOTECHS) is approved as a satisfactory means of compliance with this requirement. This does not mean that other methods cannot be used, but they will first require validation. A description of this system, its process of operation, and method of validation can be found in Flin et al. (2003).

Few studies have been reported evaluating CRM at the organizational level. O'Connor, Flin, and Fletcher (2002) report only two in the open literature, although they claim that 33% of UK operators do evaluate their programs internally at this level. The two reports available, though, shed little light on the overall effectiveness of CRM training. In contrast, military data, where the accident and incident rate is much higher, show considerable benefits from the instigation of CRM programs. For example, Diehl (1991a, b) reports an 81% drop in the accident rate in US military aviation after the introduction of CRM training.

Management of operations

Management is responsible for providing the whole of the safety infrastructure for the operation of commercial aircraft. Indeed, the management structures and responsibilities in an airline must be approved by the airworthiness authorities before they will be allowed to operate commercially. There is, however, more to promoting safe operations than simply ensuring that all the regulations are adhered to. The work of James Reason has probably been the most influential in the last decade in promoting a human-centered approach to organizational safety in the aviation industry (e.g., Maurino, Reason, Johnston, & Lee, 1995; Reason, 1997). The airline industry is now held up as the pinnacle of safety management practices in the transportation sector. Other industries are now actively engaged in assimilating the working practices of commercial aviation into their own operations where appropriate. However, underpinning it is an all-pervasive safety culture.

The organizational components that define a 'good' safety culture are well-documented and well-understood (e.g., Pidgeon & O'Leary, 1994; Palframan, 1994; Reason, 1997). Reason (1997) describes a good safety culture as one that demonstrates the 'three Cs': Commitment (the motivation and resources to pursue safety goals); Competence (the ability to gather and disseminate safety information); and Cognizance (an awareness of the risk factors). Palframan (1994) similarly focuses on a demonstration of commit-

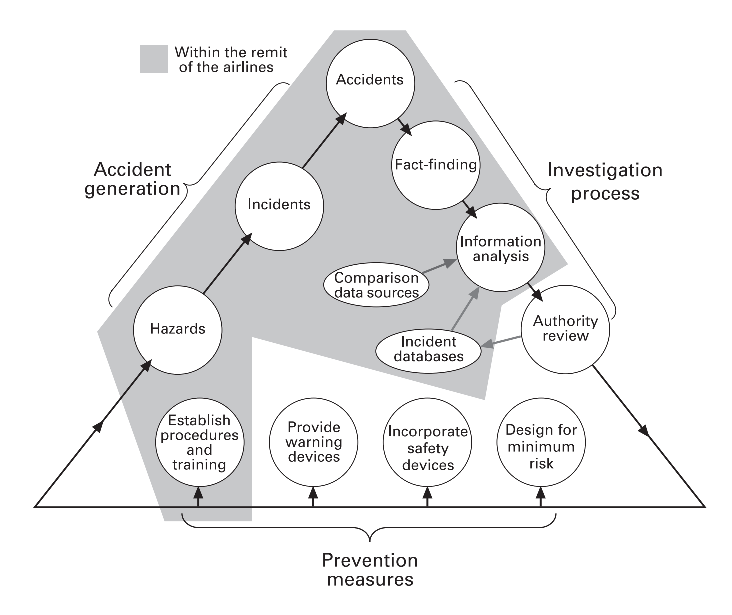


Figure 5.3 Accident generation, investigation, and prevention elements.
Adapted from Diehl (1991b), Human performance and system safety considerations in aviation mishaps, *International Journal of Aviation Psychology*, **1**, 97–106.

ment to safety from senior management, the involvement of all personnel in promoting safety, and learning lessons from accidents and incidents, rather than apportioning blame. Pidgeon and O'Leary (1994) characterize a healthy safety culture as having commitment from senior management, well-developed norms and rules to promote safety (and encouraging the workforce to follow them); norms and rules for handling hazards and risks; and possessing mechanisms to provide feedback to staff members concerning safety performance.

The identification of hazards and investigation of incidents is key to the management of safety. Hazard identification represents a more proactive approach to safety than the investigation of incidents. Diehl (1991a, b) describes the relationship between hazards, incidents, accidents, regulatory activities, and safety-promoting activities across the whole aviation system (see Figure 5.3). Not all aspects fall within the influence of the airlines (designated by the shaded area) and it would be unfair to suggest that all these components are solely the responsibility of the operators. The bottom line of the figure outlines the activities described in the US Department of Defense system safety standard *MIL-STD-882B* (US DoD, 1984). Only the last element, development of procedures and training, lies comfortably within the remit of the operators. Other elements are more concerned with aspects of the design of the aircraft, and so lie in the province of the manufacturer. On the right-hand side of the figure lies the investigative processes.

Hazard and incident analyses are key components in developing effective safety management systems.

Blame-free, confidential incident reporting schemes were initially introduced in the aviation industry in 1976 with the US Aviation Safety Reporting Scheme. Other schemes have subsequently been launched in other countries: for example. the Confidential Human Factors Incident Reporting Programme in the UK, and the Confidential Aviation Incident Reports in Australia. These are nationwide, self-report schemes. Initially, these incident reporting schemes were only open to pilots; however, they have subsequently been opened up to air traffic controllers and cabin crew. Many airlines also operate their own in-house schemes (e.g., the human factors reporting component the British Airways Safety Information System). The use of accident and incident databases is also a fundamental tool in the development of a safety culture (Dillman, Lee, & Petrin, 2003). In-company and national schemes have both benefits and drawbacks, and they should be regarded as complementary rather than as competing. National schemes ensure immunity from repercussions for the reporter; they allow many more incidents to be collected and analyzed and permit a wider perspective to be taken to identify system-wide, longer term trends. Such schemes also allow the identification of weaknesses in the interfaces between system components. In-company schemes do not allow complete freedom of castigation for the reporter (Reason, 1997 argues that such schemes should not be 'blame-free', merely be 'just'), but do allow for the identification of company-specific issues that can be followed by swift remedial actions.

To encourage reporting of any incident requires that the personnel in the system have a great deal of trust in the managers of that system. In the US, the policy of the FAA is that no action will be taken if any violation reported in a confidential report was not deliberate, did not constitute a criminal offence, and was also reported within 10 days of its occurrence. British Airways assures pilots completing any air safety report that disciplinary action will only be taken in rare circumstances where the employee concerned deliberately acted in a negligent manner.

An incident is best thought of as an accident avoided. The investigation of major incidents can be a valuable source of safety data, and can often provide higher quality insights into safety deficiencies than the investigation of accidents. It is up to the management how to turn such near misses into things of value. In high-integrity industries such as the aviation industry, emphasis has now shifted from terminating investigations once the employee who had made the error had been identified, to widening investigations to encompass the whole of the system. This usually includes the management structures in the airline and their role in the accident or incident (see ICAO, 1993a, *Circular 247-AN/148*; ICAO, 1993b, *Circular 240-AN/144*). However, the investigation of incidents is still a reactive approach to safety. Identification

of hazards is a far more proactive approach, but it is one that requires a great deal of trust between members of the organization, access to the appropriate skills, and constant vigilance.

The importance of establishing a safety culture to promote airline safety has been emphasized, as has the role of the collection and analysis of incident data. However, other managerial activities need to be undertaken toward this end. Westrum and Adamski (1999) describe these roles. These include maintaining the human assets of the organization (providing training, retaining experience, and managing work stress); managing the interfaces between organizational units and with external bodies; and, most importantly, promoting a learning environment, ensuring safety lessons learned are not lost. Management skills and practises related to safety, both within the aircraft and the management of the airline, cannot remain static as the wider environment that they operate within (the medium) is constantly changing and evolving. As a result, management must also constantly evolve.

Medium

Within the Five Ms model there are two aspects to the medium: the physical and the societal medium. The effects of physical aspects of the operating medium, such as altitude, temperature, and atmosphere, etc., are quite obvious. However, significant changes to the operating environment are being proposed, mostly aimed at increasing airspace capacity. These may impact on operating safety. With respect to the societal medium, the aviation industry is heavily regulated, and the vast majority of regulations are aimed at ensuring safety. However, aviation is an international industry and the profound effects of national culture on safety cannot be ignored.

Physical medium

Currently, air traffic control supervises a commercial aircraft on every step of its journey. Airspace is currently divided up into sectors, and teams of controllers monitor the airspace specific to their sector. As aircraft fly from way-point to way-point along designated airways, they pass through different sectors. When aircraft are handed off from one sector to another, pilots give a full status report to the new controller. This process is repeated until the aircraft is near its destination, where they are given a final altitude and position and are allocated a slot and runway for landing. Landing is again managed by the airport's tower control.

Future air traffic management practises will require aircraft to navigate in a different manner. This concept, known as free flight, will significantly affect the pilot's role and responsibilities. In free flight, responsibility for air traffic management will be delegated to the flight deck, and will no longer be under the auspices of ground-based traffic controllers. Aircraft will fly direct routes

and maneuver freely at their optimum speed and altitude, without having to consult air traffic controllers. By flying direct routes, they will spend less time in the air and use less fuel. This will reduce costs considerably. The impetus to move to a new system is also driven by the fact that the current system will not be able to cope with the increasing growth in air traffic. It is expected that the air traffic in Europe alone will double by the year 2015 (Eurocontrol, 2002). Saturation point is getting closer.

However, changes to the physical airspace demand wide-ranging changes throughout all the other components of the system. Both air traffic control and aircraft need to be re-equipped with new navigation and surveillance equipment, crews need to be trained to use this equipment and associated new procedures, and international regulatory agreement is required for the design of equipment and operation of free flight airspace. Such a change in operations resulting from a re-structuring of the airspace will have profound aspects on the human component in the whole system. Many human factors specialists are currently working in this area.

Societal medium

The two aspects of the societal medium that have the most profound effect on the safe operation of airliners are the regulatory structure and the effects of national culture. The aviation regulatory environment is incredibly complex as a result of the international nature of the industry. In fact, under the charter of the UN there is a minimum set of standards and international conventions to which all national regulatory authorities should conform. In Europe, there is a further layer of regulation in the form of the JAA. The JAA has no legal standing, but effectively provides a harmonization body for all European states for their airworthiness rules, which are then incorporated into national legislation. However, in September 2003 the European Aviation Safety Agency was formally established within the Commission of the EU, and began to oversee many of the functions of the JAA (there will be an extended transition period between the two authorities, running to many years). In the USA the FAA performs many of the same functions and there are formal procedures in place to ensure the harmonization of new airworthiness rules between these major regulatory authorities.

To give some appreciation of the depth and breadth of the aviation regulatory structure, the reader is referred to CFR (2003, *Title 14: Aeronautics and Space*), which is available online. Chapter I, which only contains parts 1–199 of *Title 14*, is concerned with the FAA and the administration and regulation of civil aviation in the US. Each part is at least 200 pages in length, and contains only regulatory material, not the supporting guidance material (the advisory circulars) which would at least triple the volume of material.

The point of this description of the complexities of aviation regulatory

structures is that these factors determine the scope of what interventions are possible. These factors also provide a vehicle for applied research to have an extremely wide-ranging influence. During the last two decades, human factors professionals have contributed to regulatory developments in the design of aircraft cabin bulkheads and seating configurations at the over-wing exit, developed and monitored regulations to control drinking and flying behavior, provided scientific advice on the flight time limitations regulations, developed human factors design requirements for the flight deck, and contributed to the regulation of CRM.

The safety culture of an airline is one of many cultures to which flight crew will simultaneously belong. Within the aircraft itself is a further cultural division between the flight deck and the aircraft cabin (Chute & Weiner, 1995, 1996). Although organizationally separate entities, flight deck and cabin crew now undergo joint training, especially aimed at dealing with situations in which such coordination is critical. Somewhat ironically, the events of September 11, 2001 have served to interfere with some of the work integrating flight deck and cabin crew cultures. When greater crew integration to counter an emerging threat would be desirable, the reverse is happening (see Bowers, Jentsch, & Salas, 2003). Cockpit doors are now reinforced and locked during flight to protect the flight deck crew from attack, effectively highlighting the traditional divide in the aircraft. In the event of a hijacking, the cabin crew and/or passengers will be sacrificed if necessary.

Merritt and Helmreich (1995) proposed that safety culture was a subculture of organizational culture, which itself was a subculture of the industry culture, which was in turn a subculture of national culture. Hofstede (1994) proposed a similar conceptualization of culture in general, which included national culture, regional/linguistic/religious culture, gender, generational culture, social class, and organizational culture. Furthermore, organizational culture is itself multidimensional, and safety-related facets are only one aspect, and, because a person simultaneously belongs to many cultures, at times the core values of each of these social edifices might be in conflict. Safety culture cannot be separated from these other influences, although management can take active steps to help engineer a safety culture.

National cultural factors have been found to be closely related to safety. Within NATO nations such as the UK, the USA, Canada, Norway, Denmark, and the Netherlands, with an individualist culture and weak uncertainty avoidance (using the Hofstede categorization), there is the lowest accident rates (Soeters & Boer, 2000). Countries like Greece, Portugal, and Turkey, with a collectivist culture and exhibiting a strong avoidance of uncertainty, have the highest accident rates (although it was also noted that economic factors may also have a significant impact, with countries in the former category being equipped with more technologically advanced equipment). In commercial aviation, Jing, Lu, & Peng (2001) noted a statistical

association between accident rates and authoritarianism (as defined by Trompenaars & Hampden-Turner, 1998). Higher levels of authoritarianism were evident in the Asian cultures than in the North American and Western European sample.

To illustrate, Helmreich (1994a, b) describes an accident where a Boeing 707 ran out of fuel during a second approach following an initial missed approach (NTSB, 1991). It was postulated that the Colombian national culture impeded CRM on the flight deck. Helmreich suggested that as Colombia was a high 'power–distance' culture there was reluctance on the part of the first officer to question the captain's actions and decisions, even though the aircraft was running low on fuel. Helmreich also suggested that there was an unwillingness within the crew to instigate an acrimonious debate which may damage intragroup harmony.

National culture has also been implicated as a factor in other accidents, its manifestation largely being a lack of communication between the crew members. These are exactly the types of accident that appropriate CRM should avoid. However, there has been criticism of the concept and implementation of CRM, especially as its training is now effectively mandatory. It has been suggested that it is biased toward a North American/Western European culture. Merritt (1993) called the failure to take into account the effects of national culture in CRM training 'cultural imperialism', which may subsequently lead to 'cultural mutiny'. It was suggested that CRM practices developed in individualist cultures may be rejected in collectivist cultures, as it would be seen as completely unacceptable to criticize group members or question superiors about their actions (see Helmreich & Merritt, 1998; Johnston, 1993; or Maurino, 1999 for further discussion on cultural aspects of CRM).

Although there appears to be a statistical association between different countries and the aircraft accident rate, there has been criticism of the manner in which culture has been 'measured'. The ultimate irony is that the descriptions of culture provided in these scientific papers suffer from a cultural bias on the parts of the writers and readers (Batteau, 2002). To counter this Jing, Lu, Yong, and Wang (2002) attempt to provide a Chinese perspective on the dimension of authoritarianism on the flight deck, as opposed to the Western stereotype. However, it is not just on human behavior that culture has a significant effect. The major aircraft manufacturers have often been accused of designing flight decks for a Western European/North American pilot population and, furthermore, the airworthiness regulations relating to design effectively constrain many design solutions, making it difficult (or almost impossible) to make a culturally congruent design. For example, the colours red, amber, and green are specifically associated with warning, caution, and normal operating states in the airworthiness regulations. In China, a very large, emerging market for European and North American aircraft, amber is associated with normal operations, and red

could be construed as a lucky colour (Roese & Zuehlke, 1998). Other issues were also identified, such as a preference among Chinese operators for menu systems to run vertically, rather than horizontally. It has also been observed that national culture affects the manner in which equipment is used. Pilots from the USA, Ireland, and Australia were more likely to question and cross-check the aircraft's automation than were those from Asia (Sherman, Helmreich, & Merritt, 1997). These Asian pilots (and also ones from other countries, such as Brazil) were also less flexible in their use of automation.

To summarize, the effects of the societal medium are pervasive. There is no such thing as a culture-free design, and the airworthiness regulations are themselves as bound in culture as are the designs they dictate, the crew training they specify, and the airline management structures they demand. Because of this, there is no 'one-size-fits-all' approach to improving flight safety.

CHALLENGES FOR THE FUTURE

The commercial aviation world is always evolving. Our role as applied psychologists is to respond to the operational challenges posed. One of the greatest safety concerns at the moment is the outsourcing of many aspects of the operation that would normally be undertaken by the airline itself (e.g., baggage-handling, aircraft maintenance, and crew-training). This is especially prevalent in the low-cost operators. In the near future, there will be the introduction of the Very Large Transport Aircraft, which will create considerable challenges for crew coordination in an emergency. The physical arrangement of airspace will also alter dramatically in the next decade with the introduction of free flight or direct routing. The fastest growing region for air transport at the moment is China and South East Asia, parts of the world with a historically poor aviation accident record and also a very different culture from that of Western Europe and North America.

In all these areas, I/O psychology has a considerable amount to offer. The technology and structural integrity in modern aircraft is now so well-developed that there are few failures in these areas. The vast majority of aircraft accidents now have a human cause to them. As noted earlier, human error is now the primary risk to flight safety (CAA, 1998c). However, it has to be emphasized that perhaps the greatest challenges are operating within regulatory structures that limit the scope for major changes and gaining international agreement for system-wide change. Although these structures have served the industry well, the pilot works within a wider system and many aspects of the regulations do not encourage system-

thinking. Human behavior does not recognize the boundaries within rulebooks.

Working with the aviation authorities to revise regulations and regulatory processes (especially when multi-national agreement is required) is a slow process. For example, the consultative process and the new certification requirements for human factors design approval for aircraft flight decks commenced with the announcement in the Federal Register in July 1999. At the time of writing, it is anticipated that new requirements *may* be implemented in Europe in the first half of 2005. However, the net safety benefits from such contributions are potentially great and worldwide. The applied psychologist working with an airline may make a much swifter contribution; however, their safety impact will be more localised. These psychologists are also under considerable pressure, though, to investigate and develop new working practises to increase efficiency (i.e., reduce costs) while maintaining safety standards, a challenge not faced by those working with the regulator. As an example, airlines are looking at the effects of fatigue on flexible rostering practises; placing less emphasis on formal, classroom/simulator-based training; increasing emphasis on e-learning; and reducing the number of cabin crew.

There is also a further challenge for I/O psychology, especially for those working in academia purporting to develop theory and publish worthy research. Aviation safety is a requirements-driven process, *not* a theory-driven process. Safety concerns exist in the 'here and now' and the research required to address these concerns often cannot wait for a body of knowledge to accrue or a theory to be developed. Academic-based I/O psychology research has been poor at responding in such situations. By the time a research proposal has been developed, the work completed, reports written, papers submitted to a journal for peer review and published, three years commonly have elapsed. This timescale is unacceptable in the commercial world where safety is concerned. The low-cost carrier (Bennett, 2003) has raised concerns about occupational stress and flight safety in crews of low-cost carriers. In the four years prior to 2003, easyJet, one of the major European low-cost carriers, grew from carrying 6 million passengers, to over 20 million (see *http://www.easyjet.com/EN/about/infopack_passengerstats.html*). Ryanair (easyJet's main competitor) grew from carrying 5.6 million passengers in 2000 to 15.7 million in 2003 (see *http://www.ryanair.com/investor/results/resultsjune_03.html*). Safety research must keep pace.

On a different note, the criteria being employed by journals for the acceptance of manuscripts, even those that claim to publish work in the applied domain, in terms of study design, statistical analysis, bounding of the research, etc., are becoming of a level and nature such that much applied work is now not worthy of 'academic' publication. This applies throughout applied psychology, not just in the aviation safety domain. As a result, a great deal of the valuable safety research undertaken is now not even submitted for

publication and is lost to the I/O psychology community. There is a situation developing where academics are studying people in organizations with a view to publishing in 'good' journals but are not actually doing real applied work that fulfills a need and solves a contemporary problem faced by industry. There is a growing divide between academic research and industrial practise, and universities are not producing the science base upon which practitioners can build. This problem is particularly exemplified in the area of aviation safety research. To illustrate the problem, in this chapter fewer than 50% of the references cited originate primarily with university-based authors.

Academia has an endemic structural problem that often serves to hinder high-quality, safety-related research being undertaken in a timely manner. The research agenda of university scientists and the research agenda of the customer are often different (cf. Anderson, Herriot, & Hodgkinson, 2001). As one way of overcoming these issues, the UK CAA has instigated a radically different approach to undertaking research in the area of flight operations. The Authority has recently established a center of excellence at a major UK aeronautical university (Flight Operations Research Centre of Excellence). Within the Centre there are ongoing streams of research that are stakeholder-driven to identify and investigate emerging flight-safety-related issues in a timely manner. However, the Centre also has capacity to react quickly to regulator questions about other human-factors-related flight safety issues and provide impartial advice. This Centre evolved because what was required was not a new research agenda to develop theory, but an organization that could respond quickly to emerging safety requirements.

A new journal has been established (*Human Factors and Aerospace Safety*) that places emphasis on publishing high-quality applied safety research where importance is primarily placed upon the application of human factors principles rather than on the out-and-out scientific rigor of the research. The reason for doing this is to make available an outlet for scientists and practitioners undertaking this type of research so the lessons learned may be spread among the human factors in the aviation community. Furthermore, the Journal aims to turn around manuscripts quickly and publish within 12 weeks of receipt of the final article. This ensures (as far as possible) that the issues addressed are contemporary.

These issues must not detract from the contributions that I/O psychology has made to aviation safety in the past or the enormous potential it has to enhance safety in the future. Scientists working in this area must be driven, though, by the requirements of the industry. There is a great deal left to contribute in this area in the future and much more to come, but the science base must keep pace with the developments in the industry and be responsive to them if it is to contribute in a positive manner to changes rather than simply react to them.

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Chapter 6

EMOTION IN ORGANIZATIONS: A NEGLECTED TOPIC IN I/O PSYCHOLOGY, BUT WITH A BRIGHT FUTURE

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In this chapter we present a review of some of the main threads of research on the role played by emotion and affect in organizations. In this respect, we refute the notion that organizations are totally rational, where the role of emotion is something that can be discounted or 'managed' out of existence. Our arguments reflect Mumby and Putnam's (1992) notion that organizations are arenas of 'bounded emotionality'. Perhaps the reason that scholars have been so reluctant to address the role of emotion in organizations is because of the inherent complexity and ambiguity surrounding emotion. Simon (1976), for example, wrestled with notions of 'irrationality' and 'arationality', without ever really admitting that emotion is a concept that can be studied by serious scholars. In this chapter, by contrast, we address this complexity head-on by elucidating the multiple levels at which emotion affects functioning in organizations.

Since publication in this book series of the ground-breaking article by Pekrun and Frese (1992), the topic of emotion and affect in organizational settings has steadily gained credence, to the point that it is now attracting considerable attention in the mainstream management and I/O psychology literature. This is evidenced in recent special issues of journals (e.g., Ashkanasy, 2004; Fisher & Ashkanasy, 2000; Fox, 2002; Humphrey, 2002; Weiss, 2001, 2002a) and edited books (e.g., Ashkanasy, Härtel, & Zerbe, 2000; Fineman, 1993, 2000; Härtel, Zerbe, & Ashkanasy, 2004; Lord,

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Klimoski, & Kanfer, 2002; Payne & Cooper, 2001). Indeed, Barsade, Brief, and Spataro (2003) have gone so far as to declare that an 'affective revolution' has transformed the study of organizational behavior.

In their 1992 review of research on emotion in the workplace, Pekrun and Frese noted that, at the time, there was 'little research that speaks of the issue of work and emotion' (p. 153). In this respect, their work was groundbreaking, although much of the analysis they presented in their review was derived from existing literature on job satisfaction and motivation that was never intended to address emotion explicitly. In this respect, Pekrun and Frese did an excellent job of identifying the underlying role of emotion in motivation and satisfaction at work. Indeed, the model of task-related and social emotions that they identified has proved remarkably robust in the light of the more recent research in this field.

Although Pekrun and Frese (1992) presented a cogent case for affect and emotion to be considered more systematically in organizational research, there was little immediate response to their call. We suspect that this may be because they failed to question the underlying reasons for this lack of interest in the study of emotion. This issue was not tackled until Ashforth and Humphrey published their 'reappraisal' of the role of emotion in organizations in 1995. Ashforth and Humphrey provided a deeper analysis of the reasons that the study of affect and emotion had failed to attain legitimacy to date in the mainstream literature. The underlying reason they identified was based on 'norms of rationality' (Ashforth & Humphrey, 1995, p. 101) that seem to have permeated post-WWII organizational science. Moreover, Ashforth and Humphrey identified an expansive agenda of research that has served as a blueprint for the future development of research in this field, encompassing the experience and expression of emotion, emotional change at the individual and organizational levels of analysis, and the nexus between the 'content and context of work and the emergence of emotions' (p. 118). Ashforth has recently acknowledged that these 'norms of rationality' still remain in place today, commenting that '(the) dearth of theorizing on emotions in organizations is partially attributable to the potent behavioral and cognitive paradigms that held sway in social psychological and organizational studies for much of the 20th Century' (Ashforth, 2000, p. xii).

But Pekrun and Frese (1992) were not entirely correct in their summation that there had been almost no interest in studying emotions in organizations prior to the 1990s. While Ashforth and Humphrey (1995) and Weiss and Brief (2001) have both described the rationalist model as a *relatively* recent phenomenon, they note that studies on affect and emotion in the workplace date back to the 1930s. For example, Weiss and Brief (2001) describe work by Fisher and Hanna, who posited that employee maladjustment at work was largely explicable in terms of 'nonadjustive emotional tendencies' (quoted in Weiss & Brief, 2001, p. 137), and Hersey (1932), who built upon Fisher and

Hanna's work, and concluded that emotion and emotional perceptions were central determining factors underlying behavior and attitudes at work. Weiss and Brief went on to describe the development of emotion and affect research that followed these early studies, but made it clear that this early interest in emotion was subsumed under the broader frameworks of stress and job satisfaction.

Mastenbroek (2000) argued further that recorded interest in emotion at work dates back to the early Renaissance. Using evocative imagery, he cited examples from philosophical literature, beginning with the work of Bernard du Rosier (1404–1475). Especially poignant in Mastenbroeck's chapter was his depiction of 18th century industrialist Josiah Wedgwood's attempts to instil self-control among his employees. In this portrayal, Mastenbroek illustrated how emotional control was, even in the earliest days of the Industrial Revolution, a central plank of management. As Ashforth and Humphrey (1995) note, however, this interest had taken a backstage role in the development of management scholarship in the 20th century.

Not surprisingly, much of the thrust of the renewed interest in studying emotions came from critical–interpretivist theorists. Prominent authors in this genre included Mumby & Putnam (1992), who coined the term 'bounded emotionality' as a foil to Simon's (1976) idea of bounded rationality, which is rooted within the cognitive perspective. Also, in the early 1990s Hosking and Fineman (1990) noted that emotions were critical to understanding of organizational behavior, and subsequently edited a remarkable collection of interpretive studies that vividly illustrated this point (Fineman, 1993). Moreover, van Maanen and Kunda (1989) described a penetrative qualitative analysis of how emotion and emotional expression are intrinsic to organizational culture.

The van Maanen and Kunda (1989) article marked a period of further realization that emotion plays a critical role through the control of emotional expression. In this respect, organizational sociologist Arie Hochschild authored *The Managed Heart*, published in 1983, which triggered interest in the power of emotional control in organizations. Hochschild coined the term 'emotional labor' to describe employees' partial remuneration for expressing emotions that are not necessarily felt, where it is deemed situationally appropriate. This was further developed by Rafaeli and Sutton (1987, 1989), who began to translate this phenomenon into research based on theory-driven model-testing (see also Sutton & Rafaeli, 1988).

By the early 1990s, therefore, after a gap of nearly 50 years, researchers working in the more positivist framework had also begun to take the study of emotions in work settings more seriously. In addition to Pekrun and Frese (1992), contributions around this time by Albrow (1992), Baron (1993), George (1990), Isen and Baron (1991), and Wharton and Erickson (1995) were beginning to attract notice. In particular, researchers began to focus on

the impact of mood in work settings. Applying the work of experimental social psychologists such as Forgas (1992) to the workplace, George and Brief (1992, 1996a, b) and others (e.g., Mittal & Ross, 1998) have examined the effect of positive and negative mood on a variety of individual and group work behaviors that affect workplace functioning and organizational outcomes. This work illustrates how important it is to understand the role of emotion in the workplace.

One of the most significant recent breakthroughs in the field of emotion in organizations, however, came in 1996 with the publication by Weiss and Cropanzano of Affective Events Theory (AET). This theory represented an explicit re-emergence of affect from the job satisfaction literature that had subsumed it following the early interest in emotion in organization. This work followed the lead of Organ and Near (1985) and Brief and Roberson (1989), who were the first to state that job satisfaction is different from affect. Specifically, Brief and Robertson observed that job satisfaction actually constitutes a constellation of attitudes towards work that includes both cognitive and affective elements.

The core ideas of AET are that (1) an employee's work behavior is determined to a large extent by the way s/he feels at the time, (2) the workplace environment is a source of discrete 'affective events' that generate these feelings, and (3) the employee's emotional responses to these events determine subsequent attitudes and behaviors. Behavior in AET can be emotion-driven, including negative behavior such as anger or violence, or positive behavior such as spontaneous helping behavior or expressions of pleasure with work. Just as importantly, behavior can be determined by attitudes that represent a more developed outcome of mood (see Forgas & George, 2001), including a decision to work productively (see Wright, Bonnet, & Sweeney, 1993; Wright & Cropanzano, 1998) or to engage in antisocial or prosocial activities (Organ, 1990).

Affective events theory thus highlights the importance of recognizing emotionality in the workplace, both in terms of the impact of object and events on employees' emotional states, and the impact of employees' emotions on workplace attitudes and behaviors. As such, AET represents an appropriate foundation for the analyses that follow in this chapter. To open our case, we review empirical research supporting the central principle of AET, that organizations are home to discrete 'affective events' that contribute to fluctuations in employee's mood and emotional states from moment to moment. After establishing the conditions under which affective states arise in the workplace, we consider the implications of emotions and moods in organizations at multiple levels of analysis. Updating Ashkanasy's (2003a, b) multilevel model of emotions in organizations, we then review the way in which affective states ultimately influence organizational outcomes by means of their impact within individuals, between individuals, on dyadic relations, on group-level dynamics, and finally on organizational culture.

In the third section of this chapter, we examine the strategic implications of emotions in the workplace. We conclude with a prospective analysis of research on emotions in organizations.

ANTECEDENTS OF AFFECT IN ORGANIZATIONS

Affect is a generic term that refers to emotions, moods, temperament, and other psychological and physiological constructs associated with positive or negative feelings (Fiske & Taylor, 1991; Frijda, 2000). Moods and emotions are affective *states*, because of their transient nature. Temperament on the other hand is associated with *trait* affect, which is a more pervasive and enduring influence on attitudes, cognitions, and behaviors. In this chapter, we focus on affective states, because trait affect is an individual difference variable that can in itself vary in its manifestation from moment to moment in accordance with affective states. As such, we consider moods and emotions to be a more relevant focus with regards to implicit influences on workplace behavior.

According to Weiss and Cropanzano (1996), while moods and emotions are distinct affective states, they are both elicited in response to *affective events*, which are situations, objects, or events that are perceived to be a threat to or opportunity for the attainment of personal goals. Thus, in AET, the workplace is fertile ground for moods and emotions to be triggered, in that workplace satisfaction and personal well-being are directly affected by an individual's ability to achieve implicit or explicit workplace goals. Affective events in the workplace therefore constitute any event or object that challenges or facilitates an individual's ability to achieve individual workplace goals. Since an individual's goals are subjective and situation-dependent, virtually any workplace event can elicit an affective response, so long as it is perceived by employees to affect their ability to achieve their personal goals, whatever they may be. As such, it is conceivable that events such as photocopier jams and computer crashes can directly affect employees' moods and emotions (see Ashkanasy & Daus, 2002 for an example).

Since the publication of Weiss and Cropanzano (1996), several authors have demonstrated the impact of events that are common to all organizations on individual employee's moment-to-moment affective states. Brief and Weiss (2002) note in particular that affective events can be grouped into four broad categories, including stressful or aversive workplace stimuli, characteristics of the physical setting, leader–member exchanges, and work team dynamics.

Stress-related Workplace Events

Affective workplace events that are stress-related are defined by Folkman and Lazarus (1988) in terms of a perceived discrepancy between situational

demands and one's coping resources to meet these demands (see also Lazarus, 1991). Common examples of stressful workplace events include conflicting role demands (Williams, Watts, McLeod, & Matthew, 1990), cognitive strain (Bodrov, 2000), time pressure (Baber, Mellor, Graham, Noyes, & Tunley, 1996), negotiating with administration (Hart, Wearing, & Headey, 1995), and physically threatening conditions (such as nursing patients with contagious disease; see George, Reed, Ballard, Colin, & Fielding, 1993). As such, stressful workplace events may be interpersonal, emotional, cognitive, or physical (Brief & Weiss, 2002).

Stress-related workplace events are associated with the experience of negative affective states arising from the perception of a threat to the attainment of personal goals (Ashkanasy, Ashton-James, & Jordan, 2004; Daniels, Harris, & Briner, 2004). While the direct threat is to the achievement of workplace goals associated with job performance rather than personal goals, job performance is a significant determinant of personal well-being (Daniels, 2000). Consequently, workplace events that are perceived to threaten job performance are, by implication, a threat to personal well-being. Ashkanasy and his associates noted further that the magnitude of the perceived threat to personal or workplace goals posed by workplace situations or events, which corresponds to the size of the perceived discrepancy between workplace demands and available coping resources, determines the intensity of negative affect experienced.

Physical Settings

Our visual, olfactory, and aural senses identify pleasantness or unpleasantness in the workplace environment. Wasserman, Rafaeli, and Kluger (2000) have demonstrated that esthetic features of the physical organizational environment affect employees' mood states. Wasserman et al. (2000) found that participants reacting to photographs of eclectic and visually stimulating interior design reported positive affective states, whereas participants' reactions to monomorphic interior designs were considerably more negative. Research in consumer behavior has found, similarly, that pleasant scents induce positive affect, and trigger positive appraisals of the organizational environment (Bartoshuk, 1991; Chebat & Michon, 2003; Danghel, 1996). The impact of pleasant odors on affect and cognition has been demonstrated in research on the spending behavior of consumers in various sensory conditions. Chebat and Michon (2003) found that consumers spent more money in environments with pleasant smells, and that the impact of pleasant smells on spending behavior was mediated by positive perceptions of the environment (see also Spangenberg, Crowley, & Henderson, 1996).

Oldham, Cummings, Mischel, Schmidke, and Zhou (1995) observed similarly that positively valenced music improved the mood states of workers. Indeed, the impact of aural stimuli on mood states has been

researched extensively (see Knobloch & Zillmann, 2002; Matsumoto, 2002; Stratton & Zalanowski, 2003). Research on the effects of unpleasant noise on affect in the workplace converges on the conclusion that unwanted and inescapable noise heightens anxiety and stress (Bouscein & Ottmann, 1996; Gilbert, Meliska, & Plath, 1997). For example, Becker, Warm, Dember, and Hancock (1995) found that jet engine noise increased the perceived workload of pilots. Similarly, Vickers and Hervig (1991) observed that the mood and well-being of passengers on US naval ships were negatively affected during low-frequency active sonar operations. As we discuss below, positive and negative mood significantly impact upon cognitions and behaviors in the workplace. As such, while there is still little research evidence on the impact of visual, olfactory, and aural stimuli on workplace performance, it is expected that sensory stimuli may indirectly impact upon workplace activity via its effect on employee's mood states.

Workgroup Characteristics

Ashforth and Humphrey (1995) and Kelly and Barsade (2001) argue that factors outside of the narrow confines of interpersonal relationships come into play to determine organizational members' affective states. Ashforth and Humphrey give examples of collective socialization in work groups (see Van Maanen & Kunda, 1989). Other factors include trust in group conflict situations (Smith & Berg, 1987) and 'emotional contagion' (Hatfield, Cacioppo, & Rapson, 1992).

The pervasiveness of affect in group contexts has been demonstrated by Barsade (2002) and Kelly and Barsade (2001). Further, George (1990, 1995) has extensively researched the effect that the affective states of work group members can have on group members' job satisfaction and group performance (see also George & Brief, 1992). Several explanations have been proposed to explain affective processes within groups, including common socialization patterns and workplace conditions (Hackman, 1992), high task interdependence (Heath & Jourden, 1997), membership stability (Bartel & Saavedra, 2000), mood regulation norms and rules (Sutton, 1991), and emotional contagion (Hatfield, Cacciopo, & Rapson, 1994). Irrespective of the underlying process, nevertheless, it is clear that affect has a pervasive and powerful effect on group members and group performance in organizational settings.

Totterdell, Kellett, Teuchmann, and Briner (1998) have shown, for example, that employee affective states are influenced by the collective mood of co-workers. Interestingly, the impact of co-workers' moods on employee emotional states was also shown to depend upon commitment to the team. Totterdell (2000) found also that significant associations between team mood states and individual team members' own moods were independent of workgroup progress towards their shared goal, while Bartel and

Saavedra (2000) found that convergence in members' mood states increased with task and social interdependence, membership stability, and mood regulation norms. Again, this research points to the pervasiveness and effect of group affect.

Leader–Member Exchange

Leaders' displays of emotion have a powerful impact upon employees' affective states and the emotional climate of the organization (Ashforth & Humphrey, 1995; George, 2000; Dasborough & Ashkanasy, 2002; Humphrey, 2002). According to George (1995), 'Leaders who feel excited, enthusiastic, and energetic themselves are likely to similarly energize their followers, as are leaders who feel distressed and hostile likely to negatively activate their followers' (p. 84). Indeed the management of employees' emotions is a key function of leadership that affects not only employees' job performance (McColl-Kennedy & Anderson, 2002), but also attributions of intentionality (Dasborough & Ashkanasy, 2002) and job satisfaction (Weiss & Cropanzano, 1996). Leaders also play an important role in the moderation of employee emotions (Pirola-Merlo, Hartel, Mann, & Hirst, 2002). Pirola-Merlo et al. (2002) found that transformational leadership style, characterized by the use of strong emotions to arouse similar feeling in their followers, suppressed the negative mood effects of obstacles to the attainment of workplace goals. Furthermore, emotional displays of leaders during periods of uncertainty or ambiguity, such as during organizational change, mediate employees' interpretation of organizational events (see also Pescosolido, 2002). It seems to be particularly important during periods of organizational change for leaders to promote optimism in employees to facilitate transition and organizational success (McColl-Kennedy & Anderson, 2002).

In summary, and contrary to the 'traditional' cognitive–rational view of organizations, the examples we have provided in the foregoing paragraphs suggest that organizational members are constantly assailed by affect-inducing stimuli that affect the way they think and feel at work. Sources of affect include stress-inducing events, the physical setting in which members work, processes within members' workgroups, and the nature of members' exchanges with their leaders.

Affective events theory thus provides a framework for understanding why an employee's moods and emotions fluctuate in the workplace. Now that the environmental determinants of affective states have been discussed, we will turn to the consequences of moods and emotions for organizational functioning at multiple levels of analysis. The multilevel model of emotions in organizations that is described below demonstrates that the presence and impact of emotions in organizational settings is pervasive and unavoidable.

THE CONSEQUENCES OF EMOTIONS IN ORGANIZATIONS: A MULTILEVEL MODEL

To structure our discussion of the consequences of emotion, we have adopted in this section the multilevel model set out in Ashkanasy (2003a). This model, depicted in Figure 6.1, spans five levels of analysis: (1) within-person, (2) between-persons (individual differences), (3) interpersonal relationships (dyads), (4) groups, and (5) the organization as a whole. Ashkanasy (2003b) argues that human neurobiology is the integrating mechanism across the five levels of the model.

Level 1 forms the foundation of the multilevel model. This level incorporates within-person neuropsychological processes, including the physiological manifestations of emotion that shape cognitive functioning (see Ashkanasy, Härtel, & Zerbe, 2000). Importantly, and as Ashkanasy et al. note, these affective reactions to events are largely beyond conscious control. Further, and consistent with AET, emotional reactions mediate the effects of everyday hassles and uplifts on outcomes. In this respect, it should be noted that it is the accumulation of frequent events, rather than infrequent intense effects, that are likely to have the most profound effects in terms of attitudes and behaviors (Diener, Smith, & Fujita, 1995).

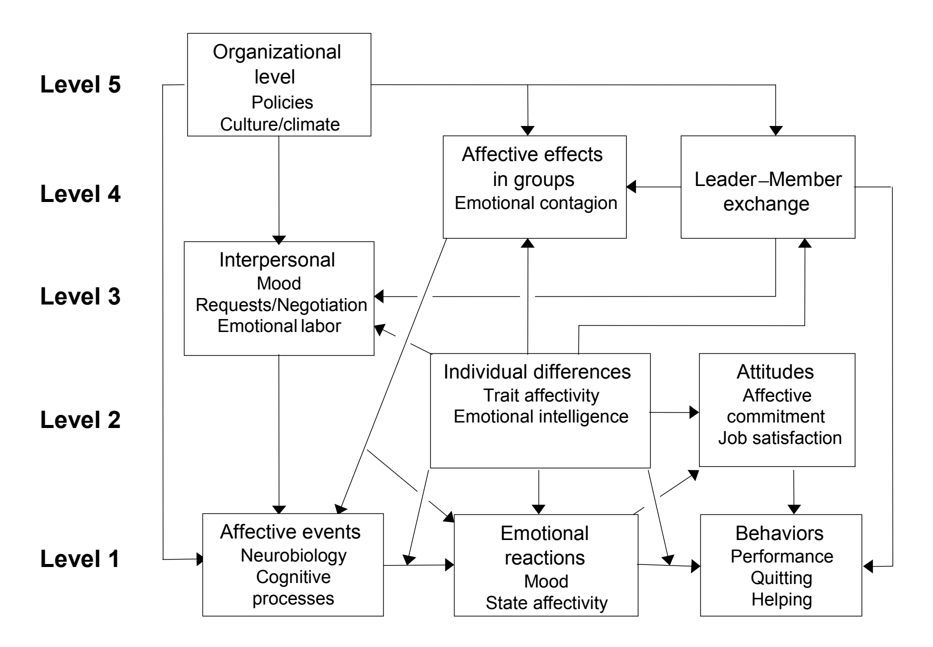


Figure 6.1 The multilevel model of emotions in organizations.
Adapted from Ashkanasy (2003a), Emotions in organizations: A multilevel perspective, in: Dansereau and Yammarino (eds), *Research in Multi-Level Issues*, **2**, 9–54, Oxford: Elsevier Science.

Level 2 represents individual differences in the model. This level includes dispositional variables such as trait affect (Watson & Tellegen, 1985) and emotional intelligence (Mayer & Salovey, 1997; Salovey & Mayer, 1990); and attitudes such as affective commitment (Meyer & Allen, 1991) and job satisfaction (Judge & Larsen, 2001). Individual differences impact on every level of the model, with the exception of Level 5 (organizational culture and climate). In particular, individual differences moderate emotional reactions at Level 1 and thereby impact on attitudes and behaviors expressed at Level 2. Individual differences, especially emotional intelligence, also affect expression and perception of emotion at Level 3 (interpersonal) that, in turn, constitute affective events at Level 1, and play a role at Level 4 (groups), through the role of emotional intelligence in leadership and group processes (Ashkanasy & Tse, 2000; George, 2000). In addition, individual differences can also act as moderators of the antecedents and consequences of emotional reactions. In this respect, Jordan, Ashkanasy, and Härtel (2002) argue that highly emotionally intelligent individuals are more able than their low-emotional intelligence counterparts to interpret and to deal with affective events, and also to regulate the effects of their emotions. Finn and Chattopadhyay (2000) argue similarly that trait affectivity affects the severity and effect of emotional reactions to events.

Perception of emotion in interpersonal exchanges (Level 3) is posited to lie at the meso-level of the model (House, Rousseau, & Thomas-Hunt, 1995), and connects to all the other levels, including leader–member exchange at Level 4, and organizational climate, culture, and policies at Level 5. Expression of emotion that is different from personally felt emotion, as in the instance of emotional labor, however, is difficult, especially when sustained (Ekman, 1992). The significance of this level and the issues raised in the processes that underlie emotional display explain in part why there has been such intense research interest in phenomena at Level 2, and also why this level has such important implications for practice.

Level 4 encompasses group interactions, including group affective composition (Kelly & Barsade, 2001), emotional contagion, and leader–member exchange (see Cogliser & Schriesheim, 2000). Ashkanasy and Tse (2000) have emphasized in particular the interconnected role of leadership in governing and reacting to emotions in groups, concluding that a leader's emotional acumen may be central to group effectiveness as well as a determinant of the individual performance of team members.

At the highest level of the model (Level 5) are organizational policies, climate, and culture. These encompass the emotional atmosphere, which De Rivera (1992) asserts can be 'palpably sensed' within organizations. Driven by top management, this dimension can include positive climate, as well as a 'climate of fear' (Ashkanasy & Nicholson, 2003). Organizational policies and industry practice are also important determinants of requirements for emotional labor (see Hochschild, 1983), which can have far-reaching effects on employees. Like Level 3, Level 5 has connections to every other level, but this time as an exogenous effect. Thus, organizational

policies can impact: (1) directly on employees in the form of affective events precipitated by managers (Weiss & Cropanzano, 1996); (2) the affective climate of the organization, which in turn may determine the affective composition of groups (see Kelly & Barsade, 2001); and (3) leader–member exchanges at Level 4 (see Cogliser & Schriesheim, 2000) that, in turn, can directly affect employee behavior. Organizational policies can also (4) constitute an input to perception of emotion, most particularly in the form of requirements for emotional labor.

In the following discussion, we expand on the ideas in Ashkanasy (2003a) to provide an up-to-date review, incorporating some of the more recent findings on the role of emotions and affect as determinants of human thought and behavior. Note, however, that this is *not* a reiteration of the Ashkanasy (2003a) model. Rather, the theoretical framework described in this chapter is an elaboration and expansion of Ashkanasy's (2003a) model, incorporating research developments and additional concepts that allow the model to provide a more comprehensive analysis of the many levels at which affect influences cognition and behavior in organizations. We begin with a discussion of neurobiology, which we emphasize once again underpins the whole of our argument concerning the centrality of emotion as a determinant of thought and behavior in organizational settings. In the following sections, we build upon this basis, and incorporate additional literature sources to flesh out further the multilevel model, and to extend its applicability in work settings.

LEVEL 1: WITHIN-PERSON

A within-person analysis of emotions in organizations considers the neuropsychological, psychophysiological, and cognitive correlates of affective events in the workplace. From this microlevel perspective, neural structures receive and interpret affective stimuli in the workplace environment, and initiate physiological changes that underlie the experience and expression of emotions in the workplace. The experience of positive and negative affect also impacts upon cognitive processes, and subsequently the way in which we interpret and respond to affective stimuli.

Neuropsychological Mechanisms

The neural substrates of human emotion have received considerable attention recently, and continue to do so. Major theoretical treatises on the brain and emotion by Damasio (1994), LeDoux (1996), Davidson (2000), and Lane (2000) have been possible largely because of recent experimental findings in animals, observations of patients with brain lesions, and brain-imaging techniques such as Positron Emission Tomography (PET) and functional Magnetic Resonance Imaging (fMRI) in healthy volunteers. The work of these and other prominent affective neuroscientists has significantly

advanced our understanding of the neural substrates underlying the perception of emotional stimuli (Lane, Chua, & Dolan, 1999), of pleasant vs. unpleasant emotions (Lane et al., 1997), of approach and withdrawal-related emotions (Davidson, 2000), of the valence and intensity of emotions (Schmidt & Trainor, 2001), and of mood regulation (Davidson et al., 2002).

These functions have been related in particular to the following neurological mechanisms: the perception of emotional stimuli, or affective events is associated with activation of the amygdala and basal ganglia (LeDoux, 1996); the differential experience of pleasant and unpleasant affect is correlated with cerebral blood flow in the medial prefrontal cortex (Brodman's 'Area 9'), thalamus, hypothalamus, and midbrain (Lane et al., 1997); the arousal of approach and withdrawal-related emotions is associated with anterior asymmetries in hemispheric activation (Davidson, 2000); frontal lobe electrical activity distinguishes the valence and intensity of emotions (Schmidt & Trainor, 2001), and the orbitofrontal cortex and ventromedial cortex are implicated in the regulation of moods and emotions (Beauregard, Levesque, & Bourgouin, 2001; Davidson et al., 2002; Rolls, 1999). Each of these areas of research highlights the important role of the neurological structures in the mediation of cognitive and behavioral functioning in response to emotions. Within the confines of this chapter, however, we will limit our review of the role of neural mechanisms in the mediation of the impact of emotions in organizations to those associated with the perception of affective workplace events, and the management or regulation of emotional experiences and expressions in the workplace.

Emotion perception

The perception of emotional stimuli or affective events in the workplace activates the amygdala and basal ganglia. The human amygdalae are best characterized as pre-attentive analyzers of the environment that look for significant information that should be responded to with behavioral changes (Hollan & Gallagher, 1999; LeDoux, 1996; Whalen, 1998). For both positive and negative stimuli, the amygdala functions to determine whether incoming stimuli are threatening and, if so, to rapidly associate the perception of those stimuli with the appropriate physiological responses (bodily changes that prepare the individual for adaptive responding) (Ochsner & Feldman Barrett, 2000). Situations that elicit positive and negative affect require very different kinds of responses. On the one hand, upon the perception of threatening stimuli, the amygdala automatically encodes the perceptual features of the stimuli in memory for future adaptational encounters, and activates bodily changes for immediate responding to perceived threats. When positive stimuli are perceived, on the other hand, they are processed by the basal ganglia.

The basal ganglia are designed slowly to encode sequences of behavior that, over time, have been repeated and rewarded, or at least not punished

(Lieberman, 2000). As noted by Ochsner and Feldman Barrett (2000), 'it makes sense to stamp in behaviors and thoughts that have led to a desirable outcome only if they continue to do so reliably' (p. 40). Similarly, the old aphorism 'fool me once, shame on you, fool me twice, shame on me', suggests that it is a survival imperative for an organism to be sure that rewards result neither from chance nor from deception. The affective representations that are encoded by the basal ganglia thus support not only the execution of habitual behaviors, but also the prediction of what comes next in a sequence of thoughts or actions (LeDoux, Romanski, & Xagoraris, 1989). These implicit skills are essential because they allow us to make automatic the sequences of thought and action that lead to adaptive success.

Brain lesion studies demonstrate that damage to the amygdala and basal ganglia impairs people's ability to perceive and integrate emotional cues, and consequently to experience and to express appropriate emotions in response to positive or negative environmental stimuli (LaBar, Gatenby, Gore, LeDoux, & Phelps, 1998). Neuropsychological studies have shown in particular that amygdala lesions block behavioral conditioning processes whereby environmental stimuli are associated with aversive outcomes for personal well-being (LaBar, LeDoux, Spencer, & Phelps, 1995). Behavioral learning is critical to adaptive success because it is the means by which individuals can perceive and respond to environmental demands implicitly, without taxing valuable attentional resources. The amygdalae thus can also be seen to play important roles in the manifestation of emotional intelligence (see Goleman, 1995).

Lesions to the caudate region of the basal ganglia, either as a result of stroke or degenerative disease (e.g., Huntington's chorea) impair the perception of emotion conveyed through facial expression and tone of voice (Cohen, Riccio, & Flannery, 1994; Speedie, Wertman, Ta'ir, & Heilman, 1993). In addition, damage to the putamen section of the basal ganglia impairs the production of nonverbal expressions of emotion, including emotional intonation and the production of voluntary facial expressions (Van Lancker & Pachana, 1995). Importantly, basal ganglia activation is associated with the experience of positive emotions in response to positive environmental stimuli (McPherson & Cummings, 1996). As such, degeneration of the basal ganglia is associated with depression and a lack of motivation to adapt to environmental demands (Breiter & Rosen, 1999). The ability to perceive and to integrate positive emotional stimuli is thus mediated by the basal ganglia and has important implications for adaptive social functioning in the workplace.

In summary, the amygdala and basal ganglia are the main neurological structures that function for the perception of affective environmental stimuli. The amygdalae determine whether incoming stimuli are threatening and, if so, rapidly associate the perception of those stimuli with the appropriate bodily changes to prepare for adaptive responding. The basal ganglia, on

the other hand, are important for encoding patterns of stimulus–response relationships that underlie the perception of affective stimuli.

Emotion regulation

According to Mayer and Salovey (1997), emotion regulation in organizations involves active modification of prepotent responses, as well as the active use of emotional responses to guide strategic behavioral decisions. Data from both animal and human studies indicate that the orbitofrontal cortex and the ventromedial frontal cortex are integral to the regulation of both the emotion generated in response to affective stimuli, and adaptive social cognitive and behavioral changes that are made in response to affective stimuli (Beauregard et al., 2001; Ochsner, Bunge, Gross & Gabrieli, 2002; Rolls, 1999).

The ability to deploy the appropriate means of regulation deliberatively requires the ability to determine the motivational relevance of an object (be it a place, person, object, or thought), and studies confirm that this is the function of the orbitofrontal and ventromedial frontal cortices (Beauregard et al., 2001; Rolls, 1999). Neuroimaging studies support the role of the orbital and ventromedial frontal cortices in the information-processing of the motivational value of external stimuli (Francis et al., 1999). Orbitofrontal activation has been found during the perception of both primary reinforcers, including pleasantly experienced touches, odours, and tastes (Francis et al., 1999), and secondary reinforcers including happy and fearful faces (Morris et al., 1998), negatively valenced words (Beauregard et al., 1997), and visual mental images of aversive scenes (Shin et al., 1997). Similarly, ventromedial frontal activation has been recorded for negative photographs (Canli, Desmond, Zhou, Glover, & Gabrieli, 1998), anxiety elicited by anticipation of electric shock (Drevets, Videen, Price, & Preskorn, 1992), and the experience of sad personal memories and viewing of photos of sad faces (Drevets et al., 1992).

Beyond computing the significance of external stimuli based on the demands of the current situation, the orbital and ventromedial frontal cortices are also important for acting on the basis of these computations (Bechara, Tranel, & Damasio, 2000). In general, lesions in these two domains impair the ability to change stimulus–reinforcement associations and cause the perseveration of behavioral responses that are manifestly maladaptive (as indicated by signals emitted from the anterior cingulate cortex, see Savage, 2002). This inability to use information about the current value of stimuli to inhibit the perseverance of maladaptive, emotion-motivated responses can have serious consequences for socio-emotional functioning. Various kinds of maladaptive behaviors have been reported following orbital and ventromedial frontal lesions, including apathy, violence, and the exhibition of

socially inappropriate behavior and language (see, e.g., Damasio, 1994; Saver & Damasio, 1991).

In summary, the neural mechanisms underlying the perception of affective events and the regulation of emotional responses play a critical role in the impact of emotions on individuals who work in organizations. The amygdalae and basal ganglia function to encode negative and positive affective events, while the orbitofrontal and ventromedial cortices moderate the experience and expression of emotion in the workplace. Lesion studies demonstrate the functional importance of these brain regions for strategic interpersonal and workplace functioning. As such, the importance of these basic functions as the foundation of emotion cannot be underestimated. In the next section, we consider the impact of emotion on cognitive functioning.

Cognitive Processing Effects

Affect influences both the content of cognition, and the strategies that people use to process information. Moreover, and following our discussion of neurobiology above, positive and negative mood have different effects on the content processes of cognition.

Content effects

The content effects of mood have received much attention in affect and cognition research (Forgas & Bower, 1987). The primary finding in this research relates to mood congruence; if an individual is in a positive mood, his or her evaluation of situational cues is optimistic or positive, and corresponding judgements and decisions are also more positive. For example, when in a positive mood, observers form more positive impressions of people (Forgas & Bower, 1987; Forgas, Bower, & Krantz, 1984), and make more optimistic risk assessments (Lerner & Keltner, 2000). When in a negative mood, on the other hand, observers are more likely to make more pessimistic risk assessments (Mittal & Ross, 1998), and to evaluate other people and situations more negatively (Forgas & Bower, 1987). A number of cognitive theories of affect congruence have been proposed. With attention to implications for organizational outcomes, we focus on two of the most influential of these theories: (1) *affect-priming theory* (Bower, 1981), and (2) the *affect-as-information model* (Schwarz & Clore, 1983).

AFFECT-PRIMING THEORY

The affect-priming account of mood-congruent content effects is based on an associative network model of mental representation (Bower, 1981; Isen, Shalker, Clark, & Karp, 1978). Fundamental to this model is the assumption that affective and cognitive representations are linked in an associative semantic network. Within this framework, thought occurs via the spreading

activation of nodes within the network. A consequence of this is that activation of affective nodes can spread to non-affective cognitive nodes through associative connections (Forgas, 2002). Hence, affect can infuse judgements by facilitating or priming access to related cognitive categories (Bower, 1981; Isen, 1987). As such, judgement and decision processes that rely on recall processes may be influenced by affect, such that affect-congruent memories and concepts are more accessible and, hence, more likely to be relied upon in the decision-making process than information that is associated with an incongruent mood. Consequently, when in a positive mood, people tend to be more optimistic, entrepreneurial, and to take more risks because situational cues are interpreted on the basis of positive rather than negative experiences. In a negative mood, however, people tend to be more cautious in their decisions, because the negative features of a situation are more easily recognized.

AFFECT-AS-INFORMATION

Mood may also have direct informational effects, serving as a heuristic cue from which to make evaluative judgements. When presented with a judgemental target, instead of deriving a response from a constructive, elaborate information search, people may simply ask themselves, 'how do I feel about it?' and base their judgements on this affective response (Schwarz, 1990). According to this affect-as-information model, mood serves as a shortcut or an informative cue about the target. As such, mood can facilitate strategic decision-making in conditions of uncertainty, where information is ambiguous or incomplete.

Information-processing effects

In addition to these informational and content effects of mood described by the affect-priming and affect-as-information accounts, affect also influences information-processing strategies. Generally, positive moods elicit a top-down, less systematic, and more heuristic processing strategy, often leading to greater flexibility and creativity (Bodenhausen, 1993; Fiedler, 1988; Hertel & Fiedler, 1994; Isen, 1987). Negative moods, on the other hand, facilitate more vigilant, focused, detail-oriented, and elaborative information-processing styles (Schwarz, 1990; Schwarz & Bless, 1991). These different general processing styles have more recently been termed 'assimilative' and 'accommodative', respectively (Fiedler & Bless, 2001). Assimilation, associated here with positive affect, a processing style whereby people rely on internal knowledge structures and routine, and schematic knowledge to deal with environmental opportunities and threats quickly and efficiently. Assimilative processing is also associated with less susceptibility to informational anchors that may bias situational assessments and inhibit consideration of alternative explanations for events (Isen, 1987).

The influence of individuals' affective states on the content and information-processing of judgements and decisions has important implications for organizational functioning. As we mentioned previously, Isen has demonstrated that positive affect predicts greater creativity and cognitive flexibility (Isen & Daubman, 1984; Isen, Daubman, & Nowicki, 1987; Isen, Johnson, Mertz, & Robinson, 1985). Isen (2002) also argues that positive mood is connected to a reduced number of self-related, task-irrelevant cognitions; and consequently facilitates task involvement and attention to task demands. As such, positive mood has potential to enhance performance on tasks for which creativity and cognitive flexibility are required, such as product design and innovation. On the other hand, George (1990) and Staw and Barsade (1993) provide evidence to suggest that employees in a negative affective state are 'sadder-but-wiser'. People in a negative affective state demonstrate a tendency to be more vigilant in their monitoring of environmental stimuli (Forgas, 1995), less susceptible to persuasion (Forgas & East, 2003) and bias (Forgas & George, 2001), and more realistic in their probability estimates (Alloy, Abramson, & Viscusi, 1981). As such, while positive mood may be beneficial for tasks that utilize divergent thinking, negative mood may facilitate performance on tasks for which accuracy, vigilance, critical thinking, and attention to detail are critical. In conclusion, it appears that both positive and negative affect have important consequences for workplace cognition, and may enhance or detract from individual performance depending on the nature of the task.

Moderators of affect congruence

While there is much empirical support for both content and processing effects of moods, there are many instances in which affect infusion does not occur, and neither the affect-priming nor the affect-as-information accounts can explain such instances (Forgas, 1995). Furthermore, there are several cases in which the mood congruence literature and the mood and information-processing literature make opposite predictions for the outcome of mood on cognition and behavior (Forgas, 1995). In response to this discrepancy, Forgas proposed the Affect Infusion Model (AIM: 1995) to explain the individual, situational, and task differences that moderate the impact of mood and emotions on cognition and behavior, via their impact on processing strategy.

The primary assumption of this model is *process mediation*: the nature and extent of mood effects depends on the information-processing strategy used for a particular task. Generally, the more elaborate and constructive is the processing strategy, the greater the affect infusion. The second assumption of the AIM is *effort minimization*: People should adopt the least effortful processing strategy capable of producing a response, all other things being equal. The AIM proposes four different processing strategies that vary along two

dimensions: (1) the effort involved in deriving a response and the degree of openness, and (2) constructiveness of the information search. Combining values on these dimensions produces the following four strategies: direct access processing (low effort/closed search), motivated processing (high effort/closed search), heuristic processing (low effort/open search), and substantive processing (high effort/open search). Mood congruence effects are most likely when some degree of open, constructive processing is used (heuristic and substantive strategies), and less likely when closed strategies are used (direct access and motivated processing).

Individual, task, and situational factors determine the information-processing strategy that the individual engages in, and thus whether or not mood congruence occurs (see Forgas, 1995, 2002 for comprehensive reviews). Individual, or person features that influence processing strategy include personal goals, the personal relevance or significance of the task to adaptive well-being, cognitive capacity, and, of course, affective state (Forgas, 2002). If the task or situation is relevant to the attainment of personal goals or well-being, then the individual will employ direct access or motivated processing to assimilate information efficiently in order to attain personal goals. In these situations, individuals will be less likely to rely on their affect as information, and consequently are less likely to show mood effects on their cognitions and judgements. Task features such as familiarity and typicality will promote the use of heuristics and schematic or 'closed' processes, for the purpose of effort minimization. As such, individuals do not show affect congruence for habitual tasks in which only direct access processing is required. Complex, novel, or difficult tasks, however, require constructive or substantive processing and, hence, facilitate affect infusion. Situational features also influence the effect of mood on cognition and behavior in organizations. Need for accuracy, publicity, social desirability, and scrutiny are all examples of situation features that can motivate individuals to process information in a way that is consistent with desired outcomes (Forgas, 2002). Hence, moods and emotions are *not* likely to affect individuals' cognition in these situations.

As Forgas and George (2001) have argued, many tasks in the workplace involve substantive processing, and are thus likely to be influenced by affective states. While the impact of emotions on the performance of every-day, habitual tasks may not be detectable or have significant implications for personal outcomes, the impact of moods and emotions on cognition may be most significant in the workplace, and, hence, important to understand. The conditions under which important managerial decisions occur are the very conditions in which substantive processing is going to be most likely: high complexity, ambiguity, and uncertainty requiring constructive and substantive processing (Forgas & George, 2001). In accordance with the principles of the AIM, therefore, it is likely that strategic organizational decisions are affected by the decision-makers' affective states. In support of this, there is

a growing body of research demonstrating the mood-congruent impact of positive and negative mood on strategic decision-making in organizations.

Mittal and Ross (1998), for example, have shown that people are more willing to take risks in conditions of uncertainty when in a positive rather than a negative mood. Consistent with the AIM, this is because positive mood facilitates the availability of knowledge, experiences, and memories that are associated with positive rather than negative outcomes. As such, in the assessment of risk, managers in a positive mood will be more likely to identify opportunities than threats, and consequently are likely to be more optimistic in their situation appraisals and to take more risks. While risk-taking may be inappropriate and dysfunctional in many organizational contexts, strategic managers are often required to take risks in conditions of uncertainty in order to harness market opportunities. For example, the decision to launch a new product into the market, or to increase the price of a product already on the market involves some risk. Research by Mittal and Ross (1998) and others (Au, Chan, Wang, & Vertinsky, 2003; Kuvaas & Kaufmann, 2004) suggests that managers in a positive mood are more optimistic in their risk assessments and more confident in their decisions and, hence, are more likely to take risks in order to achieve organizational goals.

In summary, we have described the neurobiological mechanisms that mediate employees' affective reactions to organizational events and emphasized that individual differences in brain structure and function moderate the experience and expression of emotion. Furthermore, positive and negative affective responses to organizational events influence organizational cognition. In a positive mood, employees are less vigilant in their decision-making and more optimistic in their assessments of risk than employees in a negative mood. In the following section, we move on to discuss individual difference effects specifically.

LEVEL 2: BETWEEN-PERSON (INDIVIDUAL DIFFERENCES)

Not all individuals are affected by opportunities and threats equally in organizational settings. Individual differences feature in Ashkanasy's (2003a) multilevel model as moderators of the frequency, intensity, and duration of the experience of positive and negative affective states. In the following we review the impact of trait affect and emotional intelligence on the experience of positive and negative affect in the workplace.

Trait affect

Trait affect represents a personal disposition to be in a long-term positive or negative affective state. Watson, Clark, and Tellegen (1988) examined tendencies to experience high and low levels of positive affect and negative

affect. The 'mood-dispositional dimensions' are viewed as pervasive individual differences in emotionality and self-concept (Watson & Clark, 1984), or as personality traits that predict people's general emotional tendencies (Weiss & Cropanzano, 1996). Moreover, Forgas's (1992) research has shown that people with positive or negative *trait* affect display the cognitive and behavioral tendencies that are associated with being in a positive or negative affective *state* on a continual, dispositional basis. As such, experimental research on the impact of affective states on cognition and behavior can be extrapolated to understand the cognitive and behavioral tendencies associated with trait affectivity.

Staw and Barsade (1993) suggest that trait affect may be a more useful predictor of organizational performance than positive and negative affective states because it allows for a continual, rather than temporary attitudinal and affective influence on behavior. Thus, individuals who display positive trait affect may be at an advantage performing organizational behaviors that have been shown to be enhanced by experimentally induced positive affect. For example, Fox and Spector (2000) have found that positive affectivity is related to a major facet of work success, namely job interview performance. Moreover, Judge (1993) proposed that positive trait affect is an important precursor of job satisfaction (see also Judge & Larsen, 2001).

Negative trait affect, on the other hand, is associated with the persistent use of negative situational cues (Gasper & Clore, 1998), and mediates the relationship between self-reported job stressors and self-reported stress symptoms (Brief, Burke, George, Robinson, & Webster, 1988; Schaubroeck, Ganster, & Fox, 1992). These results suggest that persons high in negative trait affect *overreport* unpleasant experiences, and are more likely to perceive situational challenges in the workplace environment. In support of this, Watson and Clark (1984) included chronic dissatisfaction among the various strains associated with high trait negative affect. As stated by Levin and Stokes (1989): '... high levels of trait negative affect are associated with a type of cognitive bias through which people approach and interpret their life experiences. This affective tendency and cognitive style may influence how people experience and evaluate their jobs' (p. 753).

While there is little evidence for a positive correlation between negative trait affect and organizational performance, this does not preclude the possibility that trait negative affect, like state negative affect, may contribute to positive organizational outcomes. By analogy with the impact of negative affective states on cognitive functioning in the workplace, it may be that the benefits of trait negative affect depend on the situation and task in which the individual is involved. For example, in organizational situations that require vigilant processing of situational cues and convergent, analytic thinking, an individual with dispositional negative affect may demonstrate consistently accurate and reliable performance, while an individual with trait positive affect may be less scrupulous and cautious in their judgements.

Similarly, while an individual with trait positive affect may demonstrate better interpersonal skills and leadership, people with dispositional negative affect may be more persistent in bargaining and negotiations, and less susceptible to persuasion (Forgas, 1999; Forgas & East, 2003).

In conclusion, trait affect describes an individual's disposition towards the experience of positive or negative affect. Those with trait positive affect are more likely to think and to behave in a way that is consistent with the impact of positive emotions on cognition and behavior, and are more likely to experience positive affect in response to positive organizational events. Trait negative affect, on the other hand, is the tendency to perceive, to evaluate, and to respond to environmental cues in a way that is consistent with the impact of negative emotions on situational appraisals and behaviors. Furthermore, individuals who show dispositional negative affect are more susceptible to job stressors and more sensitive to negative stimuli (Brief, Butcher, & Roberson, 1995).

Emotional Intelligence

Emotional intelligence relates to individual differences in the ability to perceive, to use (assimilate), to understand, and to manage or regulate one's own and others' moods and emotions (Mayer & Salovey, 1997). Differences in emotional intelligence account for between-person variation in individuals' affective responses to affective events in the workplace, and the way that positive and negative emotions affect their cognitions and behaviors in the workplace. Although currently attracting a good deal of controversy (see Becker, 2003; Daus & Ashkanasy, 2003; Jordan, Ashkanasy, & Härtel, 2002), the basic idea behind emotional intelligence—that there are individual differences in the way people process emotional information—is straightforward. Since introduction of the construct by Salovey and Mayer in 1990, however, emotional intelligence has become popularized, especially through the writings of *New York Times* journalist Daniel Goleman (1995), to the extent that the structure and importance of the underlying constructs have become muddied in the eyes of many commentators (e.g., Becker, 2003). Ashkanasy and Daus (2002) note, nonetheless, that there are four aspects that are generally agreed upon by researchers working in emotional intelligence research. These are that emotional intelligence is: (1) related to, but distinct from, other forms of intelligence; (2) an individual difference, where some have more than others; (3) a phenomenon that develops over a person's lifetime; and (4) a set of abilities involved in the perception, understanding, and management of emotion in self and others (see also Ashkanasy, Zerbe, & Härtel, 2002; Ashkanasy et al., 2004).

More specifically, Mayer and Salovey (1997) have defined emotional intelligence in terms of four 'branches' or abilities: (1) to perceive emotions in self and others; (2) to assimilate the information in cognitive functioning;

(3) to understand the role of emotions, and (4) to use and to manage emotions in decision-making. In this instance, emotional intelligence can be regarded as an integral component of the information-processing model we have presented in this chapter, where, as an individual difference, some actors are going to be more astute than others. The net effect of this is that emotional intelligence can be represented as a personal disposition that *moderates* an individual's capacity to deal with their emotions and emotional cues in organizations. In this instance, managers with higher emotional intelligence should be more astute than their low emotional intelligence colleagues at perceiving, understanding, and managing the affective influences that are likely to influence their decisions. If this is so, it may provide justification for Goleman's (1995) assertion that higher emotional intelligence managers are likely to make better strategic decision-makers. For the time being, however, as noted by Hodgkinson and Sparrow (2002), this remains to be demonstrated in empirical research.

While the impact of high vs. low emotional intelligence on individual and organizational performance is far from conclusive, the evidence so far suggests that employees with high emotional intelligence may contribute to a more positive organizational climate than individuals with low emotional intelligence. The emotional intelligence of individual employees contributes to the creation of a healthy organizational climate and positive organizational outcomes in several ways. On an individual level, high emotional intelligence is associated with the ability to recognize, to understand, and to manage one's own and others' emotions (Mayer & Salovey, 1997). Consequently, individuals with high emotional intelligence demonstrate more social and emotional competence in the workplace (Cherniss, 2000), which is positively linked with several organizational outcomes. Jordan and Troth (2004), for example, found that the ability to manage emotions was positively linked to collaborative conflict resolution style, leading to work group cohesion and, ultimately, greater team performance. Ashkanasy and his colleagues (Ashkanasy & Tse, 2000; Dasborough & Ashkanasy, 2002) have argued that leadership competence is related to the leader's ability to manage emotions. As such, emotional intelligence is theorized to have a positive effect on the organizational outcomes of work group cohesion, congruence between self- and supervisor appraisals of performance, employee performance, organizational commitment, and organizational citizenship (see also Daniels et al., 2004). Abraham (1999) also suggests that emotional intelligence may moderate the impact of emotional dissonance, ethical role conflict, and job insecurity on organizational commitment.

In summary, dispositional variables such as emotional intelligence and trait affect moderate the affective dynamics of cognition and behavior in organizations (Ashkanasy, 2003a; House, Shane, & Herold, 1996), and determine which individuals are more or less susceptible to the impact of emotions in organizations. The following section, Level 3 of the multilevel

model of emotions in organizations, deals with the interpersonal outcomes of positive and negative affective states in dyadic relationships.

LEVEL 3: INTERPERSONAL (DYADIC) RELATIONSHIPS

In the analysis of within-person differences in positive emotion (Level 1), we addressed the influence of positive and negative emotions on the content of cognitive appraisals, and on information-processing strategies. These effects of mood on cognition have important consequences for interpersonal relationships.

As proposed by AET (Weiss & Cropanzano, 1996) and the AIM (Forgas, 1995), affective events influence the content of situational appraisals as well as information-processing strategies. As a consequence of the content- and information-processing effects of mood (discussed earlier), positive and negative affective events may influence the way in which people perceive situations (positive or negative perceptual bias), which in turn affects people's interpersonal behaviors in these situations. For example, in the same way that mood state can influence risk perception and subsequent risk-taking (Mittal & Ross, 1998), positive and negative affect can also taint social perceptions, which has implications for social interactions in the workplace (Forgas & George, 2001). The impact of mood on three interpersonal workplace situations with important implications for organizational outcomes is discussed below.

Mood and Performance Feedback

Perceptions and interpretations of performance feedback are particularly salient to workplace outcomes. In their meta-analysis of the effects of feedback on performance, Kluger and DeNisi (1996) concluded that, while feedback does on average improve performance, the relationship between feedback and performance depends on the valence (positive or negative), specificity (directness), and politeness of the communication. Forgas and colleagues have demonstrated moreover that positive and negative mood influences the valence of performance appraisals (Forgas, Bower, & Krantz, 1984), the directness of interpersonal communication (Forgas, 1998a), and the politeness of communication strategies (Forgas, 1999), and, further, the way in which feedback is interpreted (Bower & Forgas, 2001). This research cumulatively suggests that the mood state of both the person giving and the person receiving performance feedback may have a significant influence on individuals' responses to performance feedback.

In this respect, research by Forgas et al. (1984) suggests that the content of performance feedback may be influenced by the mood state of the performance reviewer. In a series of studies, they found that happy people perceive

significantly more positive and skilled behaviors and fewer negative, unskilled behaviors both in themselves and in their partners than sad people. In terms of the AIM, these effects occur because affect-priming influences the kinds of interpretations, constructs, and associations that become available as people evaluate intrinsically complex and indeterminate social behaviors in the course of substantive, inferential processing. In the workplace, therefore, the same manager may form a more or less positive impression of an employee's performance based on mood state at the time of the performance review.

In addition, the way in which positive or negative feedback is interpreted or received by the employee may be influenced by concurrent mood state. Forgas and Moylan (1991) studied the impact of people's mood on perceptions of current events and found a mood-congruent effect, such that people in a negative or sad mood perceived social events more negatively than people in a positive mood. This research suggests that ambiguous performance feedback may be perceived more negatively and depreciatively by an employee in a negative mood than a positive mood. Research on the impact of performance feedback on organizational performance demonstrates that negative or depreciatory feedback leads to decreased motivation, job dissatisfaction (Bailey & Thompson, 2000), and decreased self-efficacy (Baron, 1988). Thus, the mood state of the manager while formulating performance feedback, and of the employee receiving the performance feedback, has potentially significant implications for organizational functioning.

Affective Influences on Request Strategies

A second interpersonal exchange that is of particular relevance to adaptive functioning in workplace settings occurs when employees make requests, including downward (supervisor-initiated), upward (employee-initiated) requests, and lateral requests (employee to employee). When formulating a request, the individual must phrase their request with care so as to maximize the likelihood of compliance by being assertive or direct, yet avoid the danger of giving offence by being too direct, or aggressive (Gibbs, 1983). Requesting is a common interpersonal exchange in organizations that has potentially important outcomes for an individual's ability to achieve workplace goals. For example, if a certain software package must be used to complete a project, and the employee cannot install or use the software, completion of the job depends upon the successful request of help from an informed colleague. Similarly, if photocopies are needed urgently for an important meeting and there is a line at the photocopier, the individual must request that they move straight to the front of the line. In this respect, the way in which people formulate requests is strategic: if a request is made in an impolite manner, a colleague will be less likely to comply with the request than if it is carefully formulated and enacted.

Blum-Kulka, Danet, and Gherson (1985) point out that the choice of requesting strategy is determined by the way in which the speaker assesses the degree of threat or opportunity involved. As we discussed above, it is the function of affective responses to situational cues to inform the actor of situational demands. As such, as demonstrated by Forgas (1998a, 1999), people in a positive affective state adopt a more confident and direct requesting style, which is congruent with their positive interpretation of situational demands. This result can also be explained by the affect-priming theory, which would suggest that, as a result of positive affect, there would be a greater availability of positively valenced thoughts and associated memories in the individual's assessment of the interpersonal encounter.

In addition, consistent with the AIM, Forgas (1999) found that affect infusion effects were greater when the request situation was more difficult, complex, or unconventional. Negative mood resulted in significantly more polite, elaborate, and cautious requests than did positive moods. In the workplace, therefore, it may be hypothesized that new or novice employees will be more susceptible to the effects of their temporary affective states on the formulation of requests. Consequently, to the extent that the AIM generalizes to the workplace, it would be expected that novice employees would express polite, vigilantly constructed requests in a negative affective state, and less thoughtful, unprofessional, and even offensive requests in a positive affective state. Experts, on the other hand, may be more resistant to the effects of mood on their request formulations as workplace request situations would be preformed through experience.

Affective Influences on Negotiation

Negotiation is another interpersonal task relevant to workplace outcomes that is influenced by affective state. Conflict is an ever present feature of organizational life, and face-to-face negotiation is perhaps the most common and constructive method for resolving differences between people and between groups. Recent cognitive investigations of negotiation strategies suggest that biased perceptions and assumptions are a major cause of suboptimal bargaining strategies and outcomes (Thompson, 1990). Several researchers (Baron, 1990; Carnevale & Isen, 1986; Forgas, 1998b) have found that affect is an important source of bias in the negotiation process. Consistent with the affect-as-information model of mood effects on cognition, positive and negative moods prime mood-congruent thoughts and associations when contemplating a negotiation encounter. They thus exert a significant influence on individuals' plans, goals, and bargaining strategies (Neal & Bazerman, 1991). We now turn to consider the impact of positive and negative moods on negotiations.

As mentioned previously, people in a happy mood perform better on creative problem-solving tasks, demonstrate lower levels of anger and

hostility, are more altruistic, optimistic, and flexible, and are more inclined to be helpful (Forgas, Bower, & Moylan, 1990; Hertel & Fiedler, 1994; Isen, 1987). Consistent with these findings, Carnevale and Isen (1986) found that individuals experiencing positive affect are less likely to adopt contentious negotiating strategies than others. Furthermore, Baron (1990) and Forgas (1998b) found that individuals in a positive mood are more conciliatory, make more concessions, and are more likely to reach a compromise than people in a negative mood. In a follow-up study, Forgas (1998b) demonstrated that happy people were more confident during the negotiation process, were more assertive and persistent in reaching their desired goals, behaved more cooperatively, and were more willing to use integrative strategies and make reciprocal deals than were those in a negative mood.

While positive affect may be advantageous in negotiations for which an integrative agreement is desired, negative mood may facilitate better outcomes in situations where a 'tough bargainer' image is required (Wall, 1991). A tough bargaining strategy is appropriate where the stakes for each negotiator are high and where the negotiation script calls for tough and competitive bargaining. As such, negative affect is functional in negotiations where an integrative result is untenable. Negative affect may also serve an important informational function (Schwarz, 1990), enabling actors to develop strategies that are appropriate to the environment. Van de Vliert (1985) proposed that, by intensifying perceived and experienced conflict in the negotiation processes, negative affect motivates the actors to resolve the conflict. Consistent with this rationale, Daly (1991) suggests that, in a negotiation setting, anger can be used to highlight the importance of a given issue to a negotiator, and motivate the actor to persist with negotiations. In conclusion, both positive and negative affect may have positive consequences for negotiations, depending upon the negotiation context. That is, whether an integrative or an all-or-nothing solution is desired, positive affect facilitates negotiations that are integrative and collaborative. Negative emotions, on the other hand, promote more competitive bargaining.

Emotional Labor

The final aspect of emotion in interpersonal relationships that we cover is emotional labor. First proposed by Hochschild (1983), emotional labor was one of the earlier foci of research into emotions in organizational settings, but has continued to be an important component of research in emotions in work settings. The basis of emotional labor is that many jobs and occupations, especially those, such as service work, which involve interacting with clients or customers, entail strong norms and/or expectations regarding displays of emotion. Such explicit norms are often reflected in recruitment strategies or included in job descriptions where it is made clear that the job involves smiling faces (Ashkanasy et al., 2002). These norms can also be evident in

implicit norms reflected in socialization rituals accompanying entry into the organization's culture. In this respect, Kruml and Geddes (2000) noted that service jobs are typically less valued than other jobs and often attracted lower rates of remuneration (see also Humphrey, 2000).

Hochschild (1983) posited a more insidious effect of emotional labor on employee attitudes and behavior. Specifically, she proposed that, if emotions such as anger, frustration, or resentment are 'bottled up' rather than expressed, the actor can become susceptible to outbursts of dysfunctional behavior. The implication of this is that emotional labor can result in impaired self-control, and is echoed by the 'ego depletion' model proposed by Muraven, Tice, and Baumeister (1998). According to this model, people have very limited capacity for self-regulation, and an act of self-regulation in one domain is likely to result in a reduced capacity for self-regulation in a subsequent behavioral domain. Since emotional labor involves the regulation of emotional expression, it is likely to deplete employees' self-regulatory resources and, hence, to decrease their ability to control their behavior. Ashkanasy et al. (2002) note further that emotional labor leads to 'emotional dissonance', whereby there is an innate conflict between the employees' displayed emotions and their true inner feelings. Like cognitive dissonance, emotional dissonance is associated with the experience of a negative affective state characterized by anxiety and discomfort (Harmon-Jones, 2001). In this respect, emotional labor becomes an 'affective event', in that it serves to trigger negative affective responses.

Moreover, employees experiencing emotional dissonance are not always successful when it comes to masking their true emotions. Ashkanasy (2003a) cites extensive research by Ekman and his colleagues (e.g., see Ekman, 1992; Ekman, Friesen, & O'Sullivan, 1988) that demonstrates that 'true' smiles are accompanied by physiological facial 'markers' that are not present when smiles are faked. This sets up an interactive spiral with customers who detect the inauthentic expression, and conclude that the service agent is providing poor service, leading in turn to increasing emotional labor on the behalf of the service provider (Grove & Fisk, 1990; Mann, 1999; Rafaeli & Sutton, 1987).

Emotional displays can also have effects when organizational members interact. Newcombe and Ashkanasy (2002), for example, showed in a performance evaluation scenario that employees reacted negatively to perceptions of inconsistency between their supervisor's evaluative message and the accompanying facial expression, with the most negative responses resulting from a positive evaluative message accompanied by a negative facial expression.

In summary, it is clear that emotion plays a significant role in the way that people in organizations interact with each other on a day-to-day basis, influencing not only how they go about their duties, but also the way that they interact with clients and customers. At the next level of analysis, we extend

this line of reasoning to consider groups of individuals who are interacting together.

LEVEL 4: A GROUP-LEVEL ANALYSIS

Schermerhorn, Hunt, and Osborn (2001) define a group as 'a collection of two or more people who work with one another regularly to achieve common goals' (p. 174). As such, group members interact on a dyadic and collective basis, and naturally encounter all of the perceptions and experiences that have been outlined earlier in reference to individuals and their interactions. Nonetheless, groups introduce additional dimensions of cohesiveness, collective values, and leadership that render an added level of complexity to the discussion of emotions in workplace settings. In this respect, De Dreu, West, Fischer, and MacCurtain (2001) see group settings as a sort of emotional incubator, where the emotional states of the group members combine to produce an overall group-level emotional tenor that, in turn, affects all group members.

Kelly and Barsade (2001) argue more specifically that teams possess an 'affective composition' or a group mood, which begins either with the emotional characteristics of team members, and then develops through a process of emotional contagion (see also Barsade, 2002; Hatfield, Cacioppo, & Rapson, 1992), or the emotional expression of the group leader, which evokes emotion in group members. These two means by which positive emotion is engendered in groups are discussed in the following section.

Emotional Contagion

Emotional contagion is defined by Schoenewolf (1990) as 'a process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes' (p. 50). Emotions are thus 'caught' by group members when they are exposed to the 'infectious' emotional expressions of other group members. The expression of these emotions is perceived by group members primarily via nonverbal signals (facial expressions, body language, and tone) rather than words (Mehrabian, 1972). Hatfield et al. (1992, 1994) posited that the degree to which emotional contagion then occurs is mediated by attentional processes, with greater emotional contagion occurring when more attention is allocated.

When the emotional expression is observed, an affective state of the same valence (positive or negative) is then experienced by the observer group members. The actual mechanisms by which emotions are transferred are subconscious, automatic, and 'primitive' (Hatfield et al., 1994). Psychological researchers have found that this process involves automatic nonconscious

mimicry, in which people spontaneously imitate each others' facial expressions and body language (Chartrand & Bargh, 1999), speech patterns (Ekman, Friesen, & Scherer, 1976), and vocal tones (Neumann & Strack, 2000). The second step of this primitive contagion process comes from the affective feedback people receive from mimicking others' nonverbal behaviors and expressions. This is also an automatic process. Research by Duclos et al. (1989) has demonstrated that the mimicking of nonverbal expressions of emotion results in the experience of the emotion itself through physiological, visceral, and glandular feedback responses (see Hatfield et al., 1994 for a review). While group members ultimately become aware of this feeling, the initial process of emotional contagion is subconscious and automatic.

Zurcher (1982) argues that displays of emotion in group situations constitute an essential ingredient necessary for establishment of group cohesion. Furthermore, Lawler (1992) posits that emotional expression is an essential social process in group formation and maintenance. While several studies provide evidence to support the notion that positive emotions play an important adaptive function in team processes, there is little evidence to suggest that negative affective states facilitate team productivity. In a recent study, Barsade, Ward, Turner, and Sonnenfeld (2000) found that work groups low in mean positive affect experienced significantly more task and emotional conflict and less cooperation and group cohesion than groups high in mean positive affect. Congruent with this finding, Barsade (2002) found that positive emotional contagion in groups was related to increased perceived task performance, improved cooperation, and decreased conflict. As such, positive emotion is a necessary precursor of group cohesiveness and productivity. In the context of organizational work groups, George (1990) has shown that positive affect is a key ingredient for group effectiveness and satisfaction (see also George & Brief, 1992). Lawler, Thye, and Yoon (2000) have also found that positive emotion solidifies and strengthens the person–group bond and decreases uncertainty, and as a result increases commitment to work team goals, while negative affect decreases team cohesion, motivation, and ultimately impairs performance.

Leadership of Groups

The role of leadership in communicating, expressing, and managing emotions in groups is axiomatic (see Graen & Uhl-Bien, 1995). In this respect, Ashforth and Humphrey (1995) refer to leadership in terms of the symbolic models proposed by Daft and Weick (1984) and Smirchich and Stubbart (1985). In this view, leadership is seen as a process of symbolic management (Pfeffer, 1981), and involves creating and maintaining shared meanings among followers. Ashforth and Humphrey argue that this process

depends intrinsically on the evocation of emotion. Based on Ortner's (1973) model, they note that symbols generate interacting cognitive and emotional responses, and they conclude: 'symbolic management involves orchestrating summarizing and elaborating symbols to evoke emotion which can be generalized to organizational ends' (p. 111). These symbols can be subtle and ineffable, and need not relate directly to cognitive aspects of emotion. Thus, leaders engage in the communication of symbols designed to make followers feel better about themselves, and to strengthen followers' commitment to the organization (see also Fineman, 2000; Van Maanen & Kunda, 1989).

It follows therefore that leadership entails the perception, recognition, and management of emotional cues by both the leader and the led, which we described earlier as emotional sensitivity. In this respect, the Leader–Member eXchange (LMX) model provides a useful frame of reference (see Graen & Uhl-Bien, 1995 for a review of LMX theory). The basis of LMX is that leaders and work group members exhibit different quality relationships, based on social exchanges between group members and the leader. When exchanges are high-quality, members are given better job assignments, more freedom, and greater opportunities to work with the leader. When exchanges are low-quality, on the other hand, members are given fewer opportunities to interact with the leader and perform low-status work assignments.

We argue that 'quality' in this context is largely an emotional judgement. Factors which have been shown to contribute to LMX quality include attitude similarity (Phillips & Bedeian, 1994; Turban, Jones, & Rozelle, 1990), satisfaction with the relationship (McClane, 1991), psychological size and distance (Salzmann & Grasha, 1991), and the role of mentoring (Scandura & Schreisheim, 1994). More recently, social discourse (Sias and Jablin, 1995) and perceptual categorization (Foti, 1995) have been shown to be important in determining exchange quality. Although few studies have focused on the emotional dimensions in leader–member exchanges *per se*, the clear implication of the LMX studies is that higher quality relationships between leaders and members are associated with positive emotions. As noted earlier, Newcombe and Ashkanasy (2002) demonstrated just this effect. Respondents who viewed vignettes of leaders giving performance appraisal feedback were judged more favorably on an LMX measure when they displayed positive emotion. These data suggest that a leader's displayed emotion is a critical determinant of the quality of relationships with group members, and consequently of the leader's ability to communicate emotionally evocative symbols.

In conclusion, facilitated by processes of emotional contagion, group positive affect energized by emotionally aware leaders can enhance organizational creativity and performance by assisting group cohesion and individuals' positive affect.

LEVEL 5: THE ORGANIZATION AS A WHOLE

Finally, at Level 5 of the multilevel model, the conditions necessary for positive emotion at the other levels of the model must be built and sustained across the whole organization through a healthy emotional climate (Ashkanasy & Daus, 2002). Level 5 is qualitatively different from the other levels of the model, however, in that organizational policies and values are interpreted in the context of face-to-face interactions at the lower levels, where all the basic neurobiological mechanisms discussed earlier in this chapter are salient. Thus, at these levels of the model, a manager can recognize cues of real or felt emotion, and identify the positive emotional indicators of employees who are genuinely motivated toward goal achievement and confident of achieving their goals. Similarly, in leader–member exchanges or in group situations, perception and interpretation of emotional feelings are likely to be instrumental in the development of high-quality leader–member relationships and high-performing teams. When dealing with the organization-wide, or macro, view, on the other hand, the situation is much less clear. Although some members of a large organization will have meetings with senior managers, these meetings are likely to be brief and infrequent (Mintzberg, 1973), and are also likely to be constrained by power differences (see Cartwright & Zander, 1968; Gibson & Schroeder, 2002). Instead, it is necessary to deal with the more nebulous concept of *emotional climate*, defined by De Rivera (1992) as 'an objective group phenomenon that can be palpably sensed—as when one enters a party or a city and feels an attitude of gaiety or depression, openness or fear' (p. 197).

In the context of work organizations, *organizational climate* has been studied for some time now (see Ashkanasy, Wilderom, & Peterson, 2000; Reichers & Schneider, 1990), and constitutes the collective mood of organizational members toward their jobs, the organization, and management. The concept is distinct from *organizational culture*, in that climate is essentially an emotional phenomenon, while culture is more stable, and rooted in beliefs, values, and embedded assumptions (Ashkanasy et al., 2000; Ott, 1989; Schein, 1985). Nonetheless, Schein makes it clear that assumptions underlying organizational culture are associated with deeply felt feelings. More recently, Beyer and Niño (2001) demonstrated how culture and organizational members' emotional views and states are intimately and reciprocally related. As such, both organizational climate and organizational culture arguably have emotional underpinnings.

A number of writers in the organizational literature have noted the emotional basis of organizational culture (e.g., Beyer & Niño, 2001; Fineman, 2000; Hochschild, 1983; Rafaeli & Sutton, 1987, 1989; Van Maanen & Kunda, 1989), but primarily in the context of displayed emotional states, rather than felt emotion. This begs the question as to how to ascertain real emotional climate (or culture) in organizations. Although Härtel, Gough, and

Härtel (in press) measured emotional climate and reported a correlation with job satisfaction, most advocates of an ethnographic approach (e.g., Schein, 1985; Trice & Bayer, 1993) argue that only though active day-to-day involvement in organizations is it possible to sense real as opposed to displayed emotion. De Rivera (1992) noted, however, that emotional climate is an objective phenomenon and is therefore amenable to objective perception and interpretation, provided the observer knows what to look for. In effect, his point is that observers need to be sensitive to markers of felt rather than displayed emotion. In this case, however, the markers are not so much in the individual expressions of organizational members, but in the social structures and patterns of behavior that are manifest in the organization. De Rivera argues further that people are sensitive to such cues, and shape their beliefs and behaviors accordingly. It follows that the arguments developed earlier in the present chapter in respect of interpersonal relationships and small groups may be extendable to the organization as a whole, especially since organizational policies ultimately come down to the perceptions, understanding, and behavior of individuals, interacting dyads, and groups.

The final point in respect of the organizational level is the idea of the 'emotionally healthy organization' (Ashkanasy & Daus, 2002; Cooper & Williams, 1994). According to Cooper and Williams (1994), the healthy organization is one where priority is given equally to employee well-being and maintaining positive organizational outcomes. Such an organization also minimizes negative emotional events for its employees, including a restraint on unreasonable demands for emotional labor. Härtel, Hsu, and Boyle (2002) and Kelly and Barsade (2001) are among recent authors who have emphasized the close connections between organization-level policies and group and personal emotional outcomes.

CONCLUSION AND IMPLICATIONS

In this chapter, we have attempted to demonstrate the impact of emotion in the workplace, and the consequences of emotion across five levels of analysis. Our analysis covered a variety of organizational behaviors, suggesting that emotion is indeed intrinsic to organizational behavior. Moreover, our analysis carries the deeper implication that emotions and moods have strategic implications for organizations. That is, the ability for organizations to achieve their goals is affected by the affective states of individuals and groups, and the resultant organizational climate. To illustrate this, we address the potential effects of emotion and affect in the broader instance of organizational change and strategic decision-making.

Organizational change has been identified as a major source of stress for managers and employees (Mack, Nelson, & Quick, 1998; Mak & Mueller,

2001; Weiss, 2002b). Researchers have studied organizational members' emotional responses to a variety of organizational change situations such as downsizing (Brockner, 1988; Torkelson & Muhonen, 2003), mergers (Buono & Bowditch, 1989; Schweiger & DeNisi, 1991), job redesign (Mak & Mueller, 2001), and other phenomena associated with organizational restructuring (Begley, 1998; Everly, 1999). Collectively, this research demonstrates that organizational change causes chronic occupational stress that has carry-over effects on family functioning (Dowd & Bolus, 1998), psychological health (Everly, 1999), physical health (Torkelson & Muhonen, 2003), job satisfaction, organizational commitment, and loyalty (Schweiger & DeNisi, 1991).There are also social, cognitive, and psychological consequences of organizational change that have a negative impact upon employees' affective well-being. Organizational restructuring is associated with decreased job security (Ashford, Lee, & Bobko, 1989; Jordan et al., 2002), role conflict, ambiguity, and uncertainty (French, 2001), and decreased social support as work teams are redistributed (Swanson & Power, 2001).

While the impact of organizational change on employees' affective well-being is negative in the short term, organizational restructuring and innovation is necessary for organizations to adapt to changing environmental demands in order to remain competitive. Furthermore, if the outcome of organizational restructuring is increased efficiency, promotion, increased wages, or increased social support, then organizational change may have a positive impact on employee affect (Begley, 1998). For example, technological change is associated with increased efficiency, decreased administrative burden, and as a result has been found to increase job satisfaction and well-being (Begley, 1998). Affective responses during the process of organizational change are therefore dependent upon the nature of organizational change, and exposure to or involvement in organizational change.

While organizational change may, in the longer term, result in positive outcomes for the organization and the personal well-being of its members, the majority of research suggests that employees associate organizational change with negative emotional responses (French, 2001). In effect, organizational change can be perceived as a threat by organizational members at every level, and thus is likely to impact upon their affective states. Furthermore, it is axiomatic that organizational change is a phenomenon that reaches into every level of organizational functioning, and impacts on the thoughts and behavior of every member of the organization. In this instance, and consistent with the Ashkanasy (2003a) multilevel model, emotions that individuals feel at Level 1 are promulgated through the other levels of the model, including the way that organizational members interact with each other, and the means by which emotion spreads though groups, ultimately affecting the culture and climate of the organization as a whole.

As our final point, we note that these conclusions also have strategic implications for an organization's strategic decision-makers. Affective events can be generated by internal forces (as we have presented in this chapter) or by forces external to the organization. In this sense, strategic management is manifest in various organizational functions, such as negotiation, problem-solving, and performance evaluation, which all involve assessing organizational adaptation to environmental demands, and are characterized by complexity, uncertainty, and ambiguity (Rumelt, Schendel, & Teece, 1994). While researchers in strategic management have highlighted various factors that impact upon organizational decision-making processes, including the power or status of the decision-maker, locus of control, success or failure expectations, and personality types, the impact of affect on organizational decision processes has been largely neglected (see Daniels, 1998, 1999; Hodgkinson, 2001a, b; Hodgkinson & Sparrow, 2002; Langley, Mintzberg, Pitcher, Posada, & Saint-Macary, 1995). In this instance, Forgas's (1995) AIM is important as it highlights the fact that the effect of affect on cognition is particularly salient in situations that are complex, require substantive information-processing, and especially when incomplete information is available. As such, strategic decision processes in organizations are likely to be significantly influenced by the affective states of individual decision-makers. Given our arguments above that affect permeates every level of organizational functioning, it seems reasonable to conclude that these effects will carry over to strategic decision-making affecting the overall welfare of the organization, and its performance in a changing world.

In conclusion, our analysis has highlighted the pervasive effects of emotion in organizational settings. Organizational change is a good example of the sort of experience that organizational members face on a day-to-day basis as they strive to cope in a world that is subject to constant change. We have argued in particular that emotion—and the effect of emotion—is extant at every level of organizational functioning, right up to the level of strategic decision-making. In this instance, it is simply not appropriate to take the emotion out of the organization. As such, organizational researchers can no longer continue to ignore the crucial role that emotion plays in every aspect of organizational behavior.

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Chapter 7

BURNOUT AND HEALTH REVIEW: CURRENT KNOWLEDGE AND FUTURE RESEARCH DIRECTIONS

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Clearly a major area of interest in the behavioral sciences, research continues unabated to focus on the subject of burnout and its personal, organizational, and social implications. During the period 1995–2003, about 150 articles that concerned burnout have appeared annually in journals covered by PsychInfo. A bibliography of burnout citations for the period 1990–2001 identified 2,124 items. This voluminous research was already covered in part by meta-analytic studies (Collins, 1999; Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998).

Past reviews have focused on burnout's effects on indicators of organizational effectiveness and individual performance and on work-related attitudes (Burke & Richardson, 1996, 2000; Cordes & Dougherty, 1993; Schaufeli & Buunk, 2003; Schaufeli & Enzmann, 1998; Shirom, 2003b). In the past decade there has been growing evidence of a number of deleterious consequences arising from burnout on physical health. However, the relationships between burnout and physical health, including physiological risk factors and physical disease states, have not received much attention in recent reviews of the literature. While two past reviews have carried the entities of 'burnout' and 'health' in their title (Burke & Richardsen, 1996; Leiter & Maslach, 2001), neither has discussed individual mental or physical health. Among the major theoretical approaches to burnout reviewed in Cooper (1998), none focuses on the burnout–health relationship. The primary objectives of this chapter are to review current knowledge on these issues and to provide a perspective on future directions of research into burnout–health linkages,

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covering both mental and physical health. There are few attempts in this field to theoretically model the interrelationships between burnout and its possible health consequences (Moore, 2000). Therefore, we also seek in this chapter to propose mechanisms that link burnout and individuals' health.

BASIC CONCEPTUALIZATION AND MEASUREMENT

Burnout is viewed as an affective reaction to prolonged exposure to stress at work; that is, to situations in which job demands exceed individuals' adaptive resources. We contend that the core content of this affective reaction is the feelings of emotional exhaustion, physical fatigue, and cognitive weariness that result from the gradual depletion over time of individuals' intrinsic energetic resources that occurs at work (Schaufeli & Buunk, 2003, p. 388; Shirom, 1989, 2003b). This conceptualization of burnout, based on the Conservation Of Resources (COR) theory (Hobfoll & Shirom, 1993, 2000), relates to energetic resources only, and covers physical, emotional, and cognitive energies. The three facets of burnout—namely, physical fatigue, emotional exhaustion, and cognitive weariness—are expected to be closely interrelated factors (Hobfoll & Shirom, 2000). Physical fatigue refers to feelings of tiredness and low levels of energy in carrying out daily tasks at work, like getting up in the morning to go to work. Emotional exhaustion refers to feeling too weak to display empathy to clients and co-workers and lacking the energy needed to invest in relationships with other people at work. Cognitive weariness refers to feelings of slow thinking and reduced thinking agility. Each component of burnout covers the draining and depletion of energetic resources in a particular domain. The Shirom–Melamed Burnout Measure (SMBM) was constructed to assess burnout following this conceptual approach (for more details on aspects of its construct validity see Shirom, 2003b).

Burnout may be assessed by several other measures, reflecting the varying conceptualizations that coexist in this field of study. The Maslach Burnout Inventory (MBI), in its different versions (the current version is MBI-GS; see Maslach, Schaufeli, & Leiter, 2001), is the most widely used instrument to assess burnout, and has been used in several past empirical studies of the relationships between burnout and mental health outcomes (Maslach et al., 2001; Schaufeli & Buunk, 2003). According to the conceptual approach underlying the current version of this instrument (MBI-GS), burnout is viewed as a syndrome whose components are physical and emotional exhaustion, cynical attitudes toward work or depersonalization, and reduced professional efficacy which encompasses social and nonsocial aspects of occupational accomplishment (Maslach et al., 2001; Schaufeli & Buunk, 2003). The MBI (including the recent version of MBI-GS) and the SMBM share the component of physical and emotional exhaustion. The

three-factor structure underlying the MBI has been confirmed in many studies (for a review see Schaufeli & Enzmann, 1998, pp. 50–54). It has been argued that the psychometric confirmation of the three-factor structure of the MBI (or the MBI-GS) may reflect the fact that these factors were empirically derived from an arbitrary set of items and were not based on a priori theory (Schaufeli & Buunk, 2003) or the possibility that each of the three dimensions reside in a different conceptual domain (Shirom, 2003b). Recently, an alternative burnout measure was developed and validated by a group of Dutch researchers (Van Horn, Taris, Schaufeli, & Schreurs, in press), which includes an emotional and physical exhaustion scale taken from the MBI-GS and a cognitive exhaustion scale. This new measure may indicate a convergence toward the conceptualization of burnout as a process involving the depletion of physical, emotional, and cognitive resources.

The literature on burnout has several salient characteristics. First, it is a work-related construct that is concerned primarily with employed persons, excluding the unemployed and those not gainfully employed due to illness or chronic disease. Second, most of the empirical studies on the health consequences of burnout are based on a cross-sectional study design and measure burnout, and also mental health, by asking respondents to complete a self-report questionnaire. In this review, in the very few instances where this was possible, we gave preference to longitudinal studies on the impact of burnout on health since they provide more credence to cause-and-effect statements in that they are able to test reversed causation (Zapf, Dormann, & Frese, 1996). This review covers burnout of employees in work organizations, excluding research that deals exclusively with nonemployment settings (e.g., athletes' burnout: Dale & Weinberg, 1990). In the same vein, we do not cover research that deals with burnout in life domains other than work, like the crossover of burnout among marital partners (e.g., Pines, 1996; Westman & Etzioni, 1995). In several advanced market economies, like the USA, the Netherlands and the UK, the incidence of stress-related workers' compensation claims has risen sharply in recent years (cf. Schaufeli & Enzmann, 1998). In Japan, work-related excess fatigue is considered one of the major occupational health problems (Kawakami & Haratani, 1999). Therefore, burnout at work can be regarded as a major public health problem and a cause for concern among policy-makers.

MODELS OF BURNOUT AND MENTAL HEALTH

Past reviews of the burnout literature (Burke & Richardson, 2000; Cordes & Dougherty, 1993; Hobfoll & Shirom, 2000; Moore, 2000; Schaufeli & Enzmann, 1998; Shirom, 1989, 2003b) view burnout as a consequence of one's exposure to chronic job stress. According to these reviews, the chronic stresses that may lead to burnout include qualitative and quantitative

overload, role conflict and role ambiguity, lack of participation, and lack of social support.

COR Theory and the Construct of Burnout

We start out by presenting our theoretical view of stress and burnout, which is based on Hobfoll's COR theory (Hobfoll & Shirom, 1993, 2000). COR was formulated at the individual level of analysis, using social–psychological paradigms, in contrast to other known burnout theories, formulated at the group (e.g., Bakker & Schaufeli, 2000), organizational unit (e.g., Garman, Corrigan, & Morris, 2002), or organizational (Shirom, 2003a, b) levels of analyses. Thereafter, we use this theory to chart out the theoretical links between burnout and mental and physical health. According to COR (Hobfoll, 1989, 1998), when individuals experience a loss of resources, they respond by attempting to limit the impact of that loss, through energy conservation, which itself requires additional resource expenditure. When circumstances at work or otherwise threaten the ability of the individual to obtain or maintain required resources, stress ensues. COR postulates that stress occurs in one of three conditions: (1) when resources are threatened, (2) when resources are lost, and (3) when individuals invest resources and do not reap the anticipated rate of return. COR (Hobfoll, 1989, 1998) further postulates that, because individuals strive to protect themselves from resource loss, loss is more salient than gain, and therefore employees are more sensitive to workplace stresses that threaten their resources. For example, for teachers, having to discipline students and face negative feedback from their supervisors is more salient than any rewards that they might receive. The stress of interpersonal conflict has been shown to be particularly salient in the burnout phenomenon (Leiter & Maslach, 1988).

A recent meta-analysis (Lee & Ashforth, 1996) examined how demand and resource correlates and behavioral and attitudinal correlates were related to each of the three scales that comprise the MBI. In agreement with the COR-based view of stress and burnout outlined above, these authors found that both the demand and the resource correlates were more strongly related to emotional exhaustion than to either depersonalization or personal accomplishment. Also consistent with the COR theory of stress and burnout, these investigators found that emotional exhaustion was more strongly related to the demand correlates than to the resource correlates. These meta-analytic results were subsequently reconfirmed by additional studies, like the study by Demerouti and her associates (Demerouti, Bakker, Nachreiner, & Schaufeli, 2000) who used a burnout scale that focused on energy depletion.

Applying these notions to the relationships of burnout with mental health, we argue that people feel burned-out when they perceive a continuous net loss, which cannot be replenished, of the physical, emotional, or cognitive energy that they possess. The net loss, in turn, cannot be compensated for by

expanding other resources, or borrowing, or gaining additional resources by investing extant ones. Burned-out individuals may exacerbate their losses by entering an escalating spiral of losses (Hobfoll & Shirom, 2000). Then, they may start manifesting symptoms of psychological withdrawal, like acting with cynicism toward and dehumanizing those with whom they interact, possibly even reaching an advanced stage of burnout, where the predominant symptoms are those of depression. As noted by Schaufeli and Enzmann (1998), longitudinal studies to date have not supported the notion that there is a time lag between the stress experience and the feelings of burnout. It could be that stress and burnout change simultaneously, hence the failure of the eight longitudinal studies examined by Schaufeli and Enzmann (1998) to reproduce the effects of stress on burnout found in most cross-sectional studies.

COR may be applied to advance our understanding of the linkages between burnout and indicators of mental health, like anxiety and depression. COR implies that the early stages of burnout are characterized by a process of depletion of energetic resources available for coping with work-related stresses and other threatening demands (Hobfoll & Shirom, 2000). During these early stages, individuals still try to engage in active coping to prevent further losses of energetic resources and possibly replenish lost resources. Burnout may occur concomitantly with a high level of anxiety, due to the active coping behaviors that usually entail a high level of arousal. When and if these coping behaviors prove ineffective, the individual may give up, and engage in emotional detachment and defensive behaviors that may lead to depressive symptoms (cf. Shirom & Ezrachi, 2003). Cherniss (1980a, b) found that in the later stages of burnout individuals behave defensively and, hence, display cynicism toward clients, withdrawal, and emotional detachment (for empirical support see Burke & Greenglass, 1989). These attempts at coping have limited effectiveness and often serve to heighten burnout and problems for both the individuals and the organizations in which they work.

On the Chronicity of Burnout

The last points give rise to an issue which is very relevant to the impact of burnout on health: the extent to which burnout is a chronic phenomenon, i.e., persisting at a constant level over extended time periods. If indeed burnout represents continuous loss of resources that cannot be easily replenished, as argued above, it should be quite stable when measured diachronically. To assess the cross-time stability of burnout, we have limited our review to complete panel studies that have used the emotional exhaustion subscale of the MBI: six such longitudinal studies, all using only a two-wave panel design, were identified. The findings that concern the cross-time correlation found for the emotional exhaustion subscale of the MBI

are summarized below. Bakker, Schaufeli, Sixma, Bosveld, and Van Dierendonck (2000), who studied 207 general practitioners with a 5-year time interval, found a diachronic correlation of 0.50. Lee & Ashforth (1993), who studied 169 managers of a public welfare agency with a time lag of 8 months, reported a diachronic correlation of 0.52. Leiter (1990), who investigated 122 mental health employees over a 6-month period, found a correlation of 0.49 between waves. Leiter and Durup (1994) reported finding a diachronic correlation of 0.70 in a study of 151 hospital professionals assessed 6 months apart. Yet another longitudinal study (Toppinen-Tanner, Kalimo, & Mutanen, 2002) followed 556 employees over a period of 8 years and found a correlation of 0.49. Finally, Van Dierendonck, Schaufeli, and Buunk (2001), in secondary analyses of data coming from 5 different samples of 933 employees, with time intervals varying between 3 months and 1 year, reported a correlation of 0.60. We therefore conclude that, regardless of the sample make-up, the cultural context, and the length of time of the follow-up survey, the phenomenon of burnout exhibits remarkable stability, attesting to its chronic nature. The relatively high cross-time correlations found for burnout in longitudinal studies could be related to the theoretical possibility discussed above, namely that stress and burnout are reciprocally related over time.

Burnout and Depression

Depressive symptomatology, as distinct from the clinical state of depression, includes feelings of sadness, emptiness, hopelessness, helplessness, dysphoric feelings, and low energy. It is the latter component of depressive symptomatology that gave rise to the conjecture that burnout may overlap with depression (Schaufeli & Buunk, 2003). Theoretically, the two constructs are different from each other. Depression signifies a generalized distress encompassing all life domains, whereas burnout is context-specific in that it refers to the depletion of individuals' energetic resources at work (as assessed by the SMBM) or to a set of work-related attitudes (as assessed by the MBI).

We posit that the unique core of burnout, depletion of energetic resources, is distinct in its content and nomological network from both depression and anxiety, as demonstrated by Corrigan et al. (1994) and by Leiter and Durup (1994). Measures of depression, such as the Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) include items whose contents gauge passivity and relative incapacity for purposeful action. In addition, as proposed above, later phases of burnout may be accompanied by depressive symptomatology. These arguments provide a plausible theoretical explanation of the often reported high positive correlation between burnout and measures of depression (e.g., Meier, 1984; Schaufeli & Enzmann, 1998). Based on these theoretical arguments,

we expect burnout to be conceptually distinct from depression. Depressive symptomatology is affectively complex, and includes a lack of pleasurable experience, accompanied by feelings of anger, guilt, apprehension, and physiological symptoms of distress. Moreover, cognitive views of depression regard it as related primarily to pessimism about the self, capabilities, and the future (Fisher, 1984).

There are nevertheless two theoretical considerations supporting the expectation that burnout and depression should share a significant amount of their respective variance. First, these two conceptual entities share some antecedent variables: chronic stress influences both burnout and depression. Second, depressive symptomatology, gauged as a trait, is regarded as being a component of one of the Big Five personality factors—neuroticism (McCrae & John, 1992)—which has been shown to be closely related to burnout (Zellars, Perrewe, & Hochwarter, 2000). Third, Leiter and Durup (1994) argued that emotional exhaustion, one of the three components of the MBI, overlaps the lowered energy and chronic fatigue symptoms, regarded as symptoms of depression (dysthymic disorder). Leiter and Durup (1994) further argued that the depersonalization component of the MBI implies social withdrawal and learned helplessness, theoretically regarded as key elements of depressive states.

This theoretical position may be exemplified by burnout among members of the helping professions, such as teachers, social workers, and nurses. When faced with overload and interpersonal stress on the job on an ongoing basis, the key issue for them is the amount of emotional energy they need to meet these job demands. When they feel emotionally exhausted, direct or problem-focused coping, which invariably requires that they invest emotional energy, is no longer a viable option. Presumably, they employ emotion-focused coping in an effort to ameliorate their feelings of emotional exhaustion, and attempt to distance themselves from their service recipients, psychologically withdraw from their job tasks, or limit their exposure to their clients. This may explain the often found linkage between emotional exhaustion and cynicism (Lee & Ashforth, 1996).

Evidence in Respect of the Relationship between Burnout and Mental Health

Burnout has been linked to several negative organizational outcomes, including increased turnover and absenteeism (e.g., Jackson, Schwab, & Schuler, 1986; Parker & Kulik, 1995), lower organizational commitment (Lee & Ashforth, 1996; Maslach & Leiter, 1997), and lower job performance (e.g., Cropanzano, Rupp, & Byrne, 2003). In this section, we focus on the available evidence concerning the linkages between burnout and mental health. Three indicators of mental health were investigated with regard to

their relationship with burnout: anxiety, somatic complaints, and depression symptomatology.

Anxiety and burnout

The relationship between burnout and anxiety has been investigated in several studies (Bakker & Schaufeli, 2000; Brenninkmeijer, Van Yperen, & Buunk, 2001; Leiter & Durup, 1994). Burnout may overlap with anxiety since high levels of emotional exhaustion may raise individuals' level of anxiety in stressful situations and may weaken their ability to cope with anxiety (Winnubst, 1993). In their study of the extent to which trait anxiety predicted each of the MBI components, Richardson, Burke, and Leiter (1992) concluded that it may function as a relatively stable individual difference in the burnout process. Likewise, Turnipseed (1998), using both trait and state anxiety scales to predict each of the MBI components, suggested that both are significant contributors to burnout, especially the emotional exhaustion component of the MBI.

Somatic complaints and burnout

Somatic complaints refer to subjectively reported health-related problems, such as circulatory and heart problems, musculoskeletal pains, and excessive sweating. Several studies found that burnout was associated with a variety of somatic symptoms, including sleep disturbances, recurrent headaches, and gastrointestinal problems (e.g., Gorter, Eijkman, & Hoogstraten, 2000; Kahill, 1988). Such somatic symptoms may merely reflect a personal disposition of negative affectivity (Watson & Pennebaker, 1989) rather than poor physical health.

Depressive symptomatology and burnout

Burnout has been shown to be consistently more powerfully predicted by job-related and situation-specific variables relative to emotionally distressing conditions such as depression (Maslach et al., 2001). Factor-analytic studies of items measuring burnout and depression (e.g., Schaufeli & Enzmann, 1998) have generally found each construct to load on different factors, indicating that these measures probably tap different conceptual domains. Especially noteworthy is Glass & McKnight's (1996) review of 18 studies that measured depression and burnout. Only 1 of the 18 studies did not use the BMI to measure burnout, and therefore the conclusions are relevant to burnout as gauged by the MBI. Glass and McKnight's (1996) review suggested that depressive affect and burnout may share a common etiology, and that their shared variance may be due to their concurrent development. Still, these researchers were able to conclude that burnout and depressive

symptomatology are not redundant concepts and their shared variance does not indicate complete isomorphism. Schaufeli and Enzmann (1998) reviewed 12 studies that measured burnout (as gauged by the MBI) and depression. Both reviews concluded that burnout and depression, while sharing appreciable variance, do not represent redundant concepts denoting the same underlying dysphoric state. The meta-analytic study by Schaufeli and Enzmann (1998) reported that the emotional exhaustion component of the MBI and depression shared on average 28% of their variance, while depersonalization and reduced personal accomplishment shared with depression, respectively, 13% and 9% of their variance on average.

Several studies have compared the construct validity of burnout and depression. A study of hospital nurses conducted by Glass, McKnight, and Valdimarsdottir (1993), found that under certain conditions burnout may develop into depression. However, McKnight and Glass (1995) found that burnout and depression were reciprocally, as opposed to mono-causally, related. In a more recent study conducted by Bakker, Schaufeli, Sixma et al. (2000), in which the incidence of burnout and depression among school teachers was investigated, lack of reciprocity in relations with students was found to predict burnout but not depression, whereas lack of reciprocity in relations with one's partner was found to predict depression but not burnout. Therefore, while burnout and depression share some dysphoric symptoms, including low energy, fatigue, and inability to concentrate, and have therefore been found to be empirically related to one another, the evidence summarized below supports the conclusion that they are in point of fact two distinct and separable constructs.

Burnout and Negative Emotions

In sum, as could be expected based on the above theoretical arguments, burnout, depression, anxiety, and somatic complaints were found to be significantly associated (Schaufeli & Buunk, 2003; Schaufeli & Enzmann, 1998). However, there is hardly any support for the contention that the construct of burnout is redundant in relation to any of the other indicators of poor mental health, including depression, anxiety, and somatic complaints. What then are the implications of the theoretical arguments and available evidence regarding future research on burnout and mental health?

In the affective sciences, there is widespread agreement that specific emotions are accompanied by specific biological changes (e.g., Davidson & Ekman, 1994). Differentiation in bodily function occurs to support different pattern of behaviors that are associated with different emotions. Thus, it could be argued that researchers should be able to identify the unique adverse physical health effects associated with burnout by controlling in their analyses the possible confounding effects of depression and anxiety, two negative emotions that tend to covary with burnout. This procedure

is inherently justified in that both depression and anxiety have been shown to be independent risk factors for a variety of morbid states, including impaired immune function (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002) and cardiovascular disease (Krantz & McCeney, 2002). However, negative affective states, like depression and burnout, tend to co-occur or cluster in the same persons or groups (e.g., Henningsen, Zimmermann, & Sattel, 2003). Personality dispositions like pessimism may underlie several negative affective states. Thus, there are indications that anxiety, depression, and burnout reinforce one another, particularly in people who are susceptible to emotional stimuli (cf. Bakker & Schaufeli, 2000). Concerning the possibility of group-clustering of negative affective states, there is a body of evidence supporting the view that hostility, depression, anxiety, and social isolation are all increased in lower socio-economic groups (Gallo & Matthews, 2003). Following this body of evidence, we expect that members of lower socio-economic groups will report higher levels of burnout and that due to their increased vulnerability the adverse effects of burnout on their health will be more pronounced relative to members of groups of a higher socio-economic status. Consequently, the effects of negative emotions, including burnout, depression, anxiety, social isolation, and hostility, on CardioVascular Disease (CVD) should be regarded as compounded by variables like socio-economic status. It was indeed this view that led Gallo and Matthews (2003) to suggest that negative emotions mediate the impact of socio-economic status on CVD and on physical health in general.

The proposed research strategy is for researchers to test both direct and synergic (interactive) effects of negative emotions, including burnout, depression, and anxiety, on indicators of mental health, and, with some minor adjustments, on indicators of physical health as well. The standard practice in prospective studies assessing, say, the role of negative emotions as risk factors for cardiovascular disease is to use multivariate statistical models that evaluate the risk of each negative emotion with adjustment for various demographic variables (e.g., age and gender) and other psychosocial and lifestyle factors. This enables researchers to assert that, for example, burnout predicts ill health after controlling for the 'independent' contribution of depression and anxiety to this prediction. However, this procedure does not address the issue raised above, concerning the joint contribution of burnout and depression to ill health. If the interaction between burnout and depression was found to powerfully predict CVD states, then this would suggest that interventions to reduce both burnout and depression would have a larger impact in this context. Next, it seems prudent to assess also personality traits like negative affectivity and socio-economic status, as two types of antecedent variables that may have direct impact on health in addition to their effects on health mediated by negative emotions, including burnout.

MODELS OF BURNOUT AND PHYSICAL HEALTH

Why certain physiological parameters are associated with burnout is a focal question addressed in this chapter. In this section we review several possible models that seek to capture the interrelationships between burnout and physical health.

Several recent systematic and nonsystematic reviews of prospective cohort studies and etiological studies have concluded that there is strong evidence implicating depression and somewhat inconclusive evidence implicating anxiety in the etiology and prognosis of CVD (Hemingway & Marmot, 1999; Ketterer, Mahr, & Goldberg, 2000; Kuper, Marmot, & Hemingway, 2002; Smith & Ruiz, 2002). As noted above, burnout tends to be associated with depression and anxiety on both theoretical and empirical grounds. As in the case of other negative affective responses, burnout probably influences the development and course of cardiovascular and other disease processes by several biobehavioral pathways. The first pathway includes unhealthy behaviors, like physical inactivity, smoking, excessive caloric intake, and increased alcohol intake (cf. Shirom, 2003a). The second pathway includes biological characteristics like decreased cardiovascular and/or neuroendocrine reactivity to stress (Krantz & McCeney, 2002). Two additional pathways, increased expression of the classic risk factors for CVD, including blood lipids and glucose, and increased inflammatory process, will be discussed below. It is still an open question, which in any combination of the above pathways will become effective in any particular instance. It has been suggested that the study of gene–environment interactions might shed light on this important issue (Williams, Barefoot, & Schneiderman, 2003). For example, a functional polymorphism of the serotonin transporter gene promoter has been shown to be associated with depression and with an increase in the incidence of myocardial infarction (cf. Williams et al., 2003). Therefore, use of genetic criteria in the study of gene–environment interactions in future research may enhance researchers' ability to understand which of the many potential biobehavioral pathways will become operative in specific cases.

Allostatic load, a marker of cumulative biological wear and tear introduced by Bruce McEwen (1998, 1999) and developed as an early warning signal to alert healthcare providers and the individuals concerned to signs of deregulation across multiple physiological systems, provides yet another possible pathway linking burnout with physical morbidity. Allostasis is a term that combines 'allo', indicating several interacting processes that together constitute a structural unit, with 'stasis', meaning a stable state or homeostasis, to represent physiological processes that are geared to re-establish a steady state through change (McEwen, 1998). Allostatic response refers to the short-term physiological coping processes employed in order to meet those demands of daily life that involve the Hypothalamic-Pituitary-Adrenal (HPA) axis and the autonomic nervous, metabolic, and immune systems. When the effects of

the allostatic response on target cells is prolonged, and when the mediators of this response, when no longer needed, remain operative, receptor desensitization and tissue damage may follow, representing allostatic load (McEwen, 1998, 1999). An initial operationalization of the notion of allostatic load comprised assessments of ten biological parameters reflecting functioning of the HPA axis, sympathetic nervous system, cardiovascular system, and metabolic processes (Seeman, McEwen, Rowe, & Singer, 2001). Higher scores on a summary numerical measure of allostatic load were shown in several studies to predict four major health outcomes: incidence of CVD, decline in physical and cognitive functioning, and mortality (Seeman et al., 2001). Empirical evidence supporting this possible pathway is meager: only one study, employing a cross-sectional design, measured a variable analogous to burnout and allostatic load (Schnorpfeil et al., 2003). In this study, job demands were found to be related significantly to allostatic load. This finding is consistent with the idea that burnout, representing a cumulative measure of the effects of chronic stress on persons' affective states, may be linked to allostatic load. Allostatic load emphasizes the point that there are multiple pathways to morbidity and mortality (Seeman et al., 2001). Analogously, the burnout–allostatic load linkage may represent the idea that high scores on burnout could be regarded as an early warning system indicating that potentially deleterious physiological processes are under way.

An additional possible biological mechanism that may explain burnout's effects on physical health is hypocortisolism, observed to occur in chronically stressed persons (Heim, Ehlert, & Hellhammer, 2000). For individuals with depleted coping resources, repeated exposures to chronic stress may result in reduced HPA axis reactivity (Mathews, Gump, & Owens, 2001; McEwen, 1998, 1999). This is probably associated with prolonged activation of the hypothalamic corticotrophin releasing factor (CRF) secretion that leads to down-regulation of pituitary CRF receptors, ultimately producing cortisol levels below the normal baseline (Heim et al., 2000). Hypocortisolism may be a relevant factor in the pathogenesis of several disorders, including inflammatory and autoimmune disorders, and has been reported in healthy subjects exposed to chronic stress such as parents of terminally ill children, soldiers in Vietnam, and Bosnian prisoners of war (Heim et al., 2000; Rohleder, Joksimovic, Wolf, & Kirschbaum, 2004). For example, white-collar employees with high work loads have been shown to demonstrate decreased basal plasma morning cortisol levels as well as blunted cortisol responses to increases in their work responsibilities (cf. Heim et al., 2000). The study by Pruessner, Hellhammer, and Kirschbaum (1999) provides direct evidence supporting the conjectured pathway leading from burnout to physical health in finding lower overall cortisol secretion for teachers with high burnout levels (measured by the MBI) while perceived stress was found to be correlated with increased cortisol levels, indicative of differential effects of stress and of burnout on HPA axis regulation. Yet another recent study (Moch,

Panz, Joffe, Havlik, & Moch, 2003) of 16 female patients diagnosed, by using cut-off scores based on the MBI, to have clinical burnout, concluded that there is functional hypocortisolism in burnout which is not restored with stress management intervention, despite clinical and psychological improvements.

The field of psychoneuroimmunology may provide insights into yet another possible biological pathway linking burnout and health. The current paradigm guiding health research, which views brain functioning and the endocrine, nervous, and immune systems as continuously interacting, is the prevailing paradigm in this field (for reviews see Dantzer, 2004; Maier & Watkins, 1998). Evidence accumulated in this field indicates that psychosocial stress, as well as chronic inflammation, through the mediating factors of peripheral and brain cytokines, may induce depressed mood, fatigue, and alterations in the cognitive functions, and that the latter may compromise the individual's immune competence and, via external and internal pathogens, may lead to chronic inflammation (Baum & Posluszny, 1999; Dantzer, 2004; Dougall & Baum, 2001). There is evidence that mental and physical exhaustion are related to inflammation biomarkers (Appels, Bar, Bar, Bruggeman, & de Baets, 2000). However, it is unclear if inflammation causes exhaustion or burnout, whether pre-existing feelings of burnout or exhaustion set the stage for the unfolding of inflammatory processes in the body, or whether they are reciprocally interrelated. Longitudinal studies in which the participants' levels of burnout and physical health are monitored over time may provide solid support to the expectation that the causal pathway is from burnout to physical health, with several possible mediating variables. To our knowledge, such studies have yet to be conducted.

Two physiological systems are commonly distinguished in the literature on psychobiological and physiological concomitants of chronic stress and negative affective states: the Sympathetic-Adrenergic-Medullary (SAM) axis and the Hypothalamic-Pituitary-Adrenal (HPA) axis (Cacioppo, 1998; Henry, 1992; Ursin & Eriksen, 2004), to which we have already alluded. The SAM axis includes physiological responses that indicate immediate sympathetic activation to prepare the individual to deal with the experienced stress, like elevated heart rate and blood pressure, and the release of epinephrine and norepinephrine. The HPA axis is the slower response system, and it involves the release of corticosteroids such as corticotrophin-releasing hormone, adrenocorticotropic hormone, and cortisol, resulting in immune suppression, inability to cope, depression symptomatology, and affective strain. Generally, low SAM and HPA activation is consistently found in individuals who report effective coping and controllability of their environment (Cacioppo, 1998; Henry, 1992; Ursin & Eriksen, 2004). We were unable to find any systematic evidence that there are differences in SAM axis activity related to different levels of burnout, though there have been occasional reports of such

differences (e.g., De Vente, Olff, Van Amsterdam, Kamphuis, & Emmelkamp, 2003).

The Evidence on the Relationship between Burnout and Physical Health

In this section, we refer to a series of studies by Appels and his colleagues (e.g., Appels & Mulder, 1989) in which the Vital Exhaustion (VE) measure was used. VE was developed to assess a psychosocial precursor of myocardial infarction (Appels, Hoppener, & Mulder, 1987), and represents a construct that to a certain extent overlaps with burnout in that it was defined to include excess fatigue, lack of energy, irritability, and feelings of demoralization (Appels & Mulder, 1988). Like other burnout measures, VE was found to be moderately correlated with depression (van Diest & Appels, 1991), and was found to be substantially correlated with personality factors widely recognized as CVD risk factors, including Type A Behavior Pattern, neuroticism, and hostility (Bennett, Smith, & Gallacher, 1990; Falger & Schouten, 1992). Appels and his colleagues, in a series of publications referred to below, pioneered programmatic research using the VE to predict objective indicators of physical morbidity. We also refer to research directly assessing the linkages between burnout and physical health in an additional programmatic research effort, started in the early 1990s (Shirom, 2003b). In these studies, burnout was assessed by the SMBM. The findings provided the first evidence that burnout, as assessed by one of the measures specifically constructed to gauge it, may have a negative influence on physical health. We consider it noteworthy that a study that used both the VE and the SMBM (Lerman et al., 1999), and a study that used all three measures discussed heretofore—that is, the MBI, the SMBM, and the VE measures (Grossi, Perski, Evengard, Blomkvist, & Orth-Gomer, 2003)—both found the measures to be highly correlated. To illustrate, Lerman and his colleagues (Lerman et al., 1999) reported a correlation of 0.68 between VE and the SMBM.

Cardiovascular disease (CVD)

The VE was used in several studies to predict the incidence of CVD. In a 4-year prospective study of 3,877 Dutch civil servants, VE was found to be an independent risk factor for acute, nonfatal myocardial infarction with age-adjusted relative risk of 2.3 over 4.2 years of follow-up and after controlling for the effect of classic risk factors (Appels & Mulder, 1988, 1989). This association was also found in a series of case control studies of men (Falger & Schouten, 1992) and women (Appels, Falger, & Schouten, 1993). In another case control study, VE was found to increase the risk of sudden cardiac arrest (Appels, Golombeck, Gorgels, De Vreede, & Van Breukelen, 2002). In studies conducted by Appels and his colleagues, VE was found to

be associated with sleep disturbances (van Diest, 1990; van Diest & Appels, 1994), and cardiac symptoms (angina pectoris and unstable angina) (Appels & Mulder, 1989). In another study, VE was found to be a precursor of sudden cardiac death (Appels & Otten, 1992).

Hallman and her colleagues (Hallman, Burell, Setterlind, Oden, & Lisspers, 2001) used a burnout measure that consisted of items taken from both the MBI and the SMBM (and other burnout instruments) to predict coronary heart disease in a case control study that included 538 cases and 10,485 controls, analyzing the data separately for male and female participants. It was for only the women in this study that burnout predicted the Coronary Heart Disease (CHD) cases. In another recent case control study, women with CHD ($N = 57$) reported a higher level of burnout compared with matched controls ($N = 5{,}308$) when burnout was assessed by the same combined measure (Hallman, Thomsson, Burell, Lisspers, & Setterlind, 2003). The women with CHD also showed lesser coping abilities (Hallman et al., 2003). Using data from the prospective study of healthy men (Appels & Mulder, 1988, 1989), Appels & Schouten (1991) found that a single question measuring burnout, 'Have you ever felt burned out?' was found to be predictive of myocardial infarction risk [RR (relative risk) = 2.13, $p < 0.01$]. The findings of these studies lead us to suggest that burnout, and not just VE, may be an independent risk factor for the incidence of CVD.

Diabetes

Type 2 Diabetes Mellitus (DM) is a complex disorder characterized by impaired secretion of insulin and increased resistance to insulin, and is associated with increased risk of coronary heart disease, peripheral vascular disease, renal failure, and blindness (Bailes, 2002; Beckman, Creager, & Libby, 2002). The past two decades have witnessed an explosive increase in the number of people diagnosed with diabetes worldwide (Seidell, 2000; Zimmet, Alberti, & Shaw, 2001). This epidemic relates particularly to Type 2 DM (Zimmet et al., 2001). It is argued that diabetes is becoming one of the main threats to human health in the 21st century (Zimmet et al., 2001). The most important risk factor in the onset of Type 2 diabetes is obesity, in particular abdominal obesity, and there is a worldwide increase in obesity (Visscher & Seidell, 2001). The correlation of increased diabetes with increased obesity has led to the adoption of the term 'diabesity' (Zimmet et al., 2001). Other established risk factors for Type 2 DM include age and family history of diabetes. Additional factors found to be associated with this condition are alcohol intake, smoking, reduced physical activity, and diets with a high glycemic load and a low cereal fiber content (Helmrich, Ragland, Leung, & Paffenbarger, 1991; Nakanishi, Nakamura, Matsuo, Suzuki, & Tatara, 2000; Pan et al., 1997; Rimm, Chan, Stampfer, Colditz, & Willett, 1995; Salmeron et al., 1997). Furthermore, certain risk factors for

coronary heart disease, such as hypertension and dyslipidemia, are also known to be associated with risk of Type 2 DM (Beckman et al., 2002; Jacobsen, Bonaa, & Njolstad, 2002).

Is burnout causally implicated in the onset of diabetes? Indirect evidence was provided by a study that found a moderate correlation between feelings of excessive tiredness and the insulin resistance syndrome, a risk factor for diabetes, in 90 healthy males (Raikkonen, Keltikangas-Jarvinen, Adlercreutz, & Hautanen, 1996). Another related study reported that, among 292 insulin-treated diabetic employees, both work-related factors and diabetes-related factors were associated with excessive fatigue (Weijman et al., 2003). Direct evidence from a recent study on burnout and Type 2 DM risk (Melamed, Shirom, & Froom, 2003) provides initial support for such a possibility. This study was conducted among primarily white-collar Israeli workers. After excluding those who had a history of DM or other chronic diseases, 633 workers were followed up for a period of 3–5 years. During this period there were 17 new cases of treated Type 2 DM. Burnout, as measured by the SMBM, was found to be associated with increased risk of Type 2 DM (OR = 1.83, 95% CI 1.20–2.77), even after controlling for age, sex, body mass index, smoking, period of follow-up and job category. Thus, this finding suggests that burnout might be a risk factor for Type 2 DM in Israeli workers.

Common infections

One study found small but significant associations between the MBI and self-reported episodes of cold or flu, but failed to find a significant correlation with cholesterol ratio (Hendrix, Steel, Leap, & Summers, 1991). In a study conducted during the Gulf War it was found that pre-war burnout (measured by the SMBM) was associated with wartime threat appraisal (worry) and upper respiratory infections among 162 Israeli civilians who carried on with their employment duties throughout the Gulf War (Kushnir & Melamed, 1992). In a prospective 3-year cohort study of 12,140 employees in the Netherlands (Mohren et al., 2003), a version of the MBI was used to predict increased incidence of common infections. In the longitudinal analysis, a significant effect was found for gastroenteritis, and only for the exhaustion subscale of the MBI. Mohren and her colleagues obtained these results after controlling for age, gender, educational level, and the presence of long-standing illness.

Male and female infertility

There is yet an additional domain of human health that may be influenced by burnout, that of male and female infertility. Regarding male infertility, research findings supported the hypothesis that stress has a negative

impact on semen quality (e.g., Clarke, Klock, Geoghegan, & Travassos, 1999; Giblin, Poland, Moghissi, Ager, & Olson, 1988; Harrison, Callan, & Hennessey, 1987). Based on this set of findings, a case control study was recently initiated to explore the possibility that burnout would also have negative implications for male fertility. The results confirmed this suspicion. Males with infertility problems (assessed using the combined criteria of the quantity and quality of motility, an index of sperm concentration) were found to have significantly higher burnout scores (on the SMBM) compared with controls (Sheiner, Sheiner, Carel, Potashnik, & Shoham-Vardi, 2002). This finding, if replicated, would point to yet another research frontier concerning the relationship of burnout with health impairments.

In yet another study that used the SMBM (Sheiner, Sheiner, Potashnik, Carel, & Shoham-Vardi, 2003) it was found that stress and burnout levels were not significantly different between a group of women attending a fertility clinic due to female infertility ($n = 64$) and a control group of women attending the clinic due to their partners' reproductive impairment. This finding may indicate that there are gender-related differences in the way stress and burnout are implicated in male and female reproductive problems.

Self-rated health

Self-rated health is a simple and valid proxy measure for health status (McGee, Liao, Cao, & Cooper, 1999) since it has been found to consistently predict mortality even after adjustment for physical ill health at the baseline (Idler & Kasl, 1991). It is most commonly measured with a single question asking respondents to assess their general state of health with a few response options like 'very poor', 'poor', 'fair', 'good', 'very good' with a dose response association commonly demonstrated in predicting all-cause mortality (cf. Kaplan et al., 1996). The VE measure has been linked to self-reported ill health or disease states. Using a measure of self-reported general health in a two-wave study of healthy males in Sweden, Halford and her colleagues (Halford, Anderzen, & Arnetz, 2003) found it to negatively correlate with VE. Self-rated ill health has also been found to be closely correlated with burnout in other studies (Gorter et al., 2000; Kahill, 1988; Soderfeldt, Soderfeldt, Ohlson, Theorell, & Jones, 2000). In a longitudinal study of staff burnout in a psychiatric hospital, self-reported frequency of serious illness shared 10% of the variance with the emotional exhaustion scale of the MBI, after controlling for social support and other confounding variables (Corrigan et al., 1994). Similar findings were also reported in respect of the variables in another study by Bhagat, Allie, and Ford (1995). This rather important association between burnout and poor self-rated health suggests that burnout may reflect impaired physical health.

Sleep disturbances

Findings from a study of blue-collar workers (Melamed et al., 1999), in which a version of the SMBM was used, provided evidence supporting the notion that burnout is associated with increased somatic and physiological hyper-arousal. Among those reporting higher levels of burnout, there was a higher prevalence of unpleasant sensations of tension and restlessness at work, post-work irritability, sleep disturbances, complaints of waking up exhausted and higher cortisol levels during the workday (Melamed et al., 1999). A recent study (Grossi et al., 2003) reported that all three measures considered here—the MBI, SMBM, and VE—were closely associated with sleep disturbances. These findings suggest that burned-out persons may have an inability to unwind after working hours. Furthermore, these persons may suffer from insomnia and nonrefreshing sleep. This may explain in part the chronic fatigue experienced by burned-out persons. Insomnia in general (Carney, Freedland, & Jaffe, 1990; van Diest, 1990), and waking up exhausted in particular (Appels & Schouten, 1991), were found to be risk indicators of future myocardial infarction. Therefore, the findings of this study suggest an additional pathway by which burnout may be associated with increased risk of CVD.

The metabolic syndrome

The metabolic syndrome is considered a major risk factor for heart disease, and includes five components that tend to co-occur: obesity (especially abdominal obesity), dyslipidemia (especially high levels of triglycerides and low levels of high-density lipoprotein cholesterol), and elevated levels of glucose and blood pressure (Meigs, 2003). While there is no consensus regarding the specific clinical thresholds for establishing a medical diagnosis for each of these components, the presence of three or more of the above components is considered as elevated risk for heart disease. Burnout has been found to be associated with some of the components mentioned above. In a study of 104 disease-free male employees of a high-tech company, Melamed, Kushnir, and Shirom (1992) found burnout to be correlated with elevated risk factors for cardiovascular disease. Specifically, this study reported that the combination of high burnout and tension was significantly associated with increased total cholesterol, Low Density Lipoprotein (LDL), triglycerides, and uric acid, and marginally with ECG abnormality, though no association was found for systolic and diastolic blood pressure. In another study of healthy employees (Shirom, Westman, Shamai, & Carel, 1997), burnout in men was found to be predictive of cholesterol changes, evidenced 2–3 years later. In this prospective research, among female employees emotional burnout was positively correlated but physical fatigue was negatively correlated with cholesterol and triglyceride levels (Shirom et al., 1997).

Inflammation biomarkers

Following the evidence that classical risk factors for CVD (hypertension, poor lipids profile, smoking, lack of physical exercise, and obesity) only in part explain the incidence of myocardial infraction, new research efforts have been invested in identifying alternative risk factors for CVD. Accumulating evidence indicates that there is a link between inflammation, atherosclerosis, and acute coronary syndromes (Koenig, 2001; Libby, Ridker, & Maseri, 2002; Ross, 1999). There is evidence supporting the relationships between markers of inflammation, abnormalities of glucose metabolism, and CVD end points (Resnick & Howard, 2002). Moreover, it is now widely recognized that psychological stress may induce inflammatory reactions similar to those evoked by infection, trauma, and tissue damage (Maier & Watkins, 1998). Repeated episodes of acute psychological stress may induce chronic inflammatory processes (for recent reviews see Black, 2002, 2003; Black & Garbutt, 2002; Kop, 2003). Since chronic psychosocial stress at work is a well-established antecedent of burnout (Schaufeli & Enzmann, 1998), the elevation of inflammation biomarkers could be a pathway through which burnout affects CVD.

Findings from the study by Lerman et al. (1999) suggest that burnout may be associated with an inflammation biomarker. In this study a significant association was uncovered between burnout and Leukocyte Adhesiveness/Aggregation (LAA), a sensitive marker for the detection of inflammation and assessment of its intensity (Rotstein et al., 2002). The search for LAA as a marker of inflammation was based on the notion that white blood cells become activated and sticky during the inflammatory response (Frenette & Wagner, 1996a, 1996b). LAA probably represents both enhanced expression of cell adhesion molecules during cell activation, as well as the appearance of plasmatic adhesive proteins during the acute phase response (Rotstein et al., 2002). Additional evidence indicates a high correlation between LAA and erythrocyte aggregation (Shapira et al., 2001), and there is evidence of red blood cell aggregability in patients with hyperlipidemia, diabetes mellitus, hypertension, and acute myocardial infarction (Berliner, Zeltser, Rotstein, Fusman, & Shapira, 2001; Shapira et al., 2001). Using the SMBM and other burnout measures, Grossi and his colleagues (Grossi et al., 2003) found that among 63 apparently healthy women those found to be burned-out manifested higher levels of a TNF-α-independent variety of confounding factors, including depression. This study also found that, compared with their control group counterparts, burned-out women showed higher levels of HbA1C, which is a measure of chronic glycemia (Barr, Nathan, Meigs, & Singer, 2002) and appears to be a marker of the increased risk of developing atherosclerosis, CVD, strokes, cataracts, and loss of elasticity of arteries, joints, and lungs (Kelly, Hertzman, & Daniels, 1997). The authors concluded that, among women,

burnout seems to involve enhanced inflammatory responses and oxidative stress.

An association between VE and serological markers of inflammation was observed in a study by Appels and his associates (Appels, Bar et al., 2000) which was conducted among patients treated with directional coronary angioplasty because of severe angina. The results showed exhausted or depressed patients had higher levels of pro-inflammatory cytokines IL-1β and TNF-α, but not of IL-6 compared with patients who were not exhausted or depressed (this study's design did not allow the researchers to distinguish between depressed and burned-out patients). In a second study of persons over 65 years old, VE was associated with albumin, fibrinogen, C-reactive protein, and WBC (Kop et al., 2002). No such association with depression was found after adjusting for several control variables. This second study also supported previous observations of interrelations between coagulation, fibrinolytic, and inflammatory processes (Kop et al., 2002). In a longitudinal study of 102 healthy males, high levels of s-prolactin, an endocrine measure of long-term exposure to stress, predicted VE (Halford et al., 2003). Thus, by implication burnout may be associated with CVD risk through the presence of smoldering inflammation. This hypothesis awaits further confirmation, or refutation, through more extensive research.

The above evidence gives rise to the hypothesis that burnout may be implicated in the acute phase response. The acute phase response, which may follow either stress or infection, includes physiological, behavioral, mood, and cognitive adjustments (Maier & Watkins, 1998). Among these adjustments are increased levels of pro-inflammatory cytokines; reduction in activity, social interaction, and sexual behavior; depressive symptoms; and interference with certain types of memory and activation of the HPA system (Maier & Watkins, 1998). Some of those symptoms overlap with the core contents of burnout; namely, emotional, cognitive and physical depletion of energy.

Burnout and the immune system

Burnout may have a negative effect on the immune system and consequently elevate inflammation biomarkers and increase the incidence of infections. In a study of 42 male office workers, one of the MBI's components, depersonalization, was found to be associated with reduced cellular immunity (lower Natural Killer (NK) cell activity and lower proportionality of CD57 + CD16 to total lymphocytes. This was independent of health behaviors (e.g., smoking, alcohol use, obesity) or work stress (Nakamura, Nagase, Yoshida, & Ogino, 1999). The study by Mohren et al. (2003) provides strong evidence for burnout as a risk factor for common infections in a large heterogeneous population. Taken together with the previous set of findings reported by Nakamura et al. (1999), we are led to suggest that burned-out persons may

be at risk of reduced immuno-competence and may be potentially prone to a variety of infectious diseases such as upper respiratory infections and different types of viral infections. Again, this may be an important avenue for future research, since not all studies support this conclusion. In a cross-sectional study of 71 physicians, a team of Italian researchers (Bargellini et al., 2000) failed to find any relationship between a host of immune variables and two components of the MBI, emotional exhaustion and cynicism, but did find the third component, personal accomplishment, to be significantly associated with these participants' immune profiles. It is of interest to note that immune dysfunction in patients with Chronic Fatigue Syndrome (CFS) has been widely but inconsistently reported in past research. A recent meta-analysis of the evidence (Lyall, Peakman, & Wessely, 2003) reached the conclusion that no consistent pattern of immunological abnormalities could be identified in CFS patients.

Health behaviors

Schaufeli and Enzmann (1998, p. 88) were able to find four studies that have investigated the linkages among health behaviors (coffee consumption, alcohol consumption, calorie intake, substance abuse, and smoking) and emotional exhaustion (as measured in the MBI), and all of them reported null or very small correlations. We were able to find two recent studies, both of dentists, in different countries, that found significant correlations between alcohol consumption and emotional exhaustion or burnout (Gorter et al., 2000; Winwood, Winefield, & Lushington, 2003). Melamed et al. (1992), in a study of 104 disease-free male employees in the high-tech industry, found that a high level of tense burnout was associated with poor health habits, including smoking and lack of participation in physical leisure activities, which is consistent with the findings of Gorter et al. (2000). However, the findings of Melamed et al. (1992) linking burnout and health behaviors were based on very small and unrepresentative samples. Therefore, the relationship among health-related behaviors and burnout appears to be an area in need of additional research. The evidence at hand does not support viewing health behaviors as either moderating or mediating the relationship between burnout and health.

Taken together, the findings of the above studies suggest that burnout may be associated with CVD risk through multiple pathways: sleep disturbances, increased biochemical risk factors, inflammation, and perhaps also reduced immuno-competence.

SUMMARY

Research on the implications of burnout for physical health is relatively new, yet the accumulating evidence suggests that chronic burnout may harm

physical health through different pathways. We found evidence supporting the notion that burned-out individuals might show dysregulation of HPA axis activity resulting mainly in hyposecretion of cortisol. We have reported on studies that support other possible pathways, involving increased biochemical and hematological risk factors for CVD, diabetes (as an independent risk factor for CVD), sleep disturbances, enhancement of the inflammation process, and impairment of the immune system. Burnout can result in various forms of physical morbidity: CVD, cardiac death, Type 2 DM and its associated complications, infectious diseases, and impairment of sperm quality. We found evidence that burnout is associated with elevated lipids levels, suggesting that the sympathetic nervous system mediates this relationship. On the negative side, we have failed to find evidence that burnout is related to the SAM axis physiological response; *inter alia*, we found no evidence of burnout-related differences in blood pressure, heart rate, and catecholamines secretion.

A major reservation that applies to most of the research covered by this review is that it was limited to cross-sectional data and, therefore, does not provide support for causal linkages. An additional major reservation that applies to most burnout research is that it has been based on working adults, to the exclusion of the unemployed, those unable to work because of disability or chronic illness, and those not in the labor force. Therefore, a variant of the healthy worker effect may be present in the burnout literature. However, it should be noted that, in the context of our review of burnout and health, such a possible bias lends support to the validity of the major findings reported above rather than detracting from them (cf. Karasek & Theorell, 1990).

It seems that future research aimed at clarifying the possible effects of stress on health may benefit from including burnout as an additional predictor variable. Burnout may become a proxy variable reflecting the combined influence of chronic stresses, critical life events, and hassles at work. Therefore, including burnout in future studies may lead to the identification of individuals chronically exposed to various forms of stress and to the identification of a number of major types of coping resource depletion. The lines of research summarized above suggest that these individuals are likely to be at the highest risk of impaired health, but there are still several open questions that await answers from future research into the relationship between burnout and health.

DIRECTIONS FOR FUTURE RESEARCH

Is Burnout a Unidimensional or a Multidimensional Construct?

As noted, most of the studies reviewed above have used three measures of burnout: the MBI, in its various forms, the VE, and the SMBM. These

measures were shown in factor-analytic studies to possess multidimensional properties. This raises the question of when it is appropriate to use a summary measure of burnout, ignoring the multidimensionality of this construct (Brenninkmeijer & Van Yperen, 2003). In the SMBM, the three subscales reflect closely related facets of the process of energetic resource depletion and empirically were found to be closely related (Shirom, 2003b). Consequently, a researcher's decision to use the SMBM overall score to represent burnout as a unidimensional construct is probably valid. As for the MBI in its various version, using a total score or average scores to represent all three components is a questionable decision, in view of the evidence that each relates to different antecedents and consequences (Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998; Thoresen, Kaplan, Barsky, Warren, & Chermont, 2003). Future research may determine the appropriateness of using a summary measure of the VE, as has been the practise in most studies using it.

Burnout, Depression, and Physical Health

As indicated above, the burnout measures referred to in this review were shown in past research to be moderately associated with depression, with correlations typically ranging from 0.50 to 0.60. Feelings of physical fatigue and tiredness, represented in the SMBM physical fatigue scale, also appear as a symptom of depression but it is not a core symptom or compulsory in the diagnosis of clinical depression (cf. Fuhrer & Wessley, 1995). As noted above, depression is a context-free affective measure, whereas burnout refers to work-related affective states. Still, the fact remains that depression is a well-established risk factor for CVD and other morbidities. The potential overlap of depression with the VE appears to be a serious problem, since the latter includes core symptoms that are quite similar to those of depression. Thus, in a factor-analytic study, Appels and his colleagues (Appels, Kop, & Schouten, 2000) found that the VE consisted of three factors: fatigue, depression affect, and irritability. Kopp and his colleagues (Kopp, Falger, Appels, & Szedmak, 1998) found a moderate correlation ($r = 0.62$) between VE and a measure of depression in a very large and representative sample of Hungarian adults; however, they also found that their measures of VE and of depression were each differently associated with risk factors for CVD. It could be that depression mediates some of the effects of burnout on physical health (cf. Brenninkmeyer et al., 2001; Glass et al., 1993); future research could fruitfully address this hypothesis.

Burnout and the Chronic Fatigue Syndrome

The syndrome of burnout has been practically overlooked by researchers in behavioral medicine and related areas of the medical sciences that have been studying its extreme form, the Chronic Fatigue Syndrome (CFS). This is

evidenced by a recent compendium of research on the CFS (Friedberg & Jason, 1998) which did not make any reference to burnout. CFS is an illness of unknown etiology associated with significant disability; characteristic symptoms include profound fatigue lasting for 6 months or more, impaired memory or concentration, sleep disturbances, sore throat, and other symptoms (for a discussion of the diagnosis and components of the CFS see Friedberg & Jason, 1998, pp. 49–65). Early references to the relevant disease entities often went under the symptomatic categories of asthenia, lassitude, lethargy, or listlessness. CFS is now recognized as a legitimate disease state (Shafran, 1991). Idiopathic Chronic Fatigue (ICF) is CFS with fewer symptoms, but studies comparing CFS and ICF patients have found few clinically meaningful differences between the two categories, and ICF is now regarded as a point on a continuum leading to CFS (cf. Johnson, DeLuca, & Natelson, 1999).

Researchers who have studied the psychological pathogenesis of CFS tended to view clinical depression as antedating the development of this disease state since fatigue is one of the symptoms included in many measures of depression and it is present in all cases of CFS (Shafran, 1991). However, several studies have found that CFS is distinct from depression in both the biological and psychiatric domains (Friedberg & Jason, 1998, p. 24). The medical model of CFS disregards the role of stress in bringing about the disease (cf. Wessely, 1995). Only a small minority of those complaining of chronic fatigue are diagnosed as having CFS (Wessely, 1995). Etiologically, the role of burnout in bringing about CFS at some point is a working hypothesis that has yet to be systematically investigated by future research (cf. Huibers et al., 2003). Huibers et al. (2003) pioneered in this respect by exploring the relationship between burnout (gauged by the MBI) and CFS in a sample of 151 fatigued employees on sick leave. In this cross-sectional study of a highly selected sample, they found that 44% of fatigued employees met CFS criteria and 50% of them met the research criteria of being burned-out. The relations between burnout and the CFS appear to be a promising area for future research.

Burnout and Chronic Fatigue

Fatigue is a common phenomenon accompanying any mental and physical exertion, and it is characteristically task-specific and reversible. In contrast, chronic fatigue represents a situation wherein one's energetic resources are not replenished by rest or changing tasks (Michielsen, De Vries, & Van Heck, 2003). Chronic fatigue is a relatively common complaint presented by employees and by patients visiting their primary care physicians (Bultmann, Kant, Kasl, Beurskens, & van den Brandt, 2002; Fuhrer & Wessley, 1995; Huibers et al., 2003); about 20% of the working population in different surveys reported fatigue, with the prevalence rate ranging between 7% to

45%, depending on the instrument used and the applied cut-off points. Different studies have found that about one-fifth of those patients who visit primary care clinics in different developed countries complain of chronic fatigue (e.g., Kroenke, Wood, Mangelsdorff, Meier, & Powell, 1988). Two epidemiological surveys, which covered sizable representative samples in the USA and in the UK, found that about 14% to 20% of the male respondents and about 20% to 25% of the female respondents described themselves as always feeling tired or significantly fatigued (Shafran, 1991).

We could not find any study that systematically investigated the potential linkages between chronic fatigue and burnout or the potential etiological role of work-related stresses for both entities. One exception is the recent panel study of fatigue and burnout among 123 ambulance workers in the Netherlands studied one year apart (van der Ploeg & Kleber, 2003). In this study it was found that the within-wave and diachronic correlations of the fatigue subscale of the Checklist of Individual Strength, a chronic fatigue measure, and the emotional exhaustion subscale of the MBI were, respectively, 0.50 and 0.41, but the pattern of their relations with their expected antecedents was quite similar. An examination of items included in scales constructed for the assessment of chronic fatigue indicate that they include components that are analogous to those represented in the popular measures of burnout, such as physical and mental exhaustion in the scale constructed by Michielsen (Michielsen et al., 2003), and physical fatigue, reduced motivation, and reduced activity in the frequently used scale constructed by Smets and her colleagues (Smets, Garssen, Bonke, & De Haes, 1995). A recent psychometric comparison of six fatigue questionnaires concluded that they are all unidimensional (De Vries, Michielsen, & Van Heck, 2003). The task of theoretically and empirically integrating chronic fatigue research and burnout research is a major challenge that has yet to be confronted.

The relationship between fatigue and psychological distress in general and depression in particular has been explored in several studies. For example, in a study of 3,784 primary-care patients in France, Fuhrer and Wessely (1995) found that there was a strong relationship between fatigue and depression, but fatigue was neither sensitive nor specific to the diagnosis of depression. In a study of 12,095 employed adults in the Netherlands (Bultmann et al., 2002), a prevalence rate of 22% for fatigue and 23% for psychological distress was found, but, while closely associated, the evidence led this group of researchers to conclude that these conditions are different and can be measured independently.

The Medicalization of Burnout?

In recent years, in being the first to label individuals with high scores on burnout scales as 'cases' or 'patients', a group of Dutch researchers have implied that these instruments have clinical validity (Schaufeli, Bakker,

Hoogduin, Schaap, & Klader, 2001; Schaufeli & Buunk, 2003). This group of researchers was able to demonstrate empirically that the emotional exhaustion and depersonalization subscales of the MBI distinguished between burned-out and nonburned-out patients at a psychotherapeutic treatment center (Schaufeli et al., 2001). Presently, there are no clinically validated cut-off points available with respect to any of the instruments used to assess burnout, with most researchers using arbitrary cut-off points like the 80th or 90th percentile (Schaufeli, in press; Schaufeli et al., 2001). Psychometrically, establishing cut-off scores to define 'clinical burnout' is bound to be dependent on the country, gender, age, and occupational characteristics of the sample studied since levels of burnout have been shown to be closely dependent on them (cf. Schaufeli & Enzmann, 1998).

In the burnout literature, employees who admit that they are burned-out do not necessarily become stigmatized as inept or incompetent employees. On the contrary, anecdotal evidence suggests that managers regard burned-out employees as those highly committed to their job and organization, those who invest in their tasks and duties and therefore tend to experience burnout. In their recent meta-analysis of burnout research that used the MBI between 1982 and 1994, Lee and Ashforth (1996) identified seven empirical studies of the relationship between burnout and organizational commitment. Across the seven studies, the mean corrected correlation between these variables was −0.43 for the component of emotional exhaustion of the MBI. Therefore, both popular opinion and research evidence support the argument that those who report being burned-out carry a minimal stigmatizing burden. The diagnosis of their complaint is not confined to their personal vulnerabilities but rather extends to the job, organization, and family contexts implicated in the burnout process (e.g., Leiter & Maslach, 1988; Maslach et al., 2001; O'Driscoll & Schubert, 1988). Restricted individual access to those resources that can be applied to cope effectively with work-related stresses, thereby reducing their impact on burnout, is often viewed as a prime cause of burnout (Schaufeli & Buunk, 2003; Shirom, 2003b).

Possible Organizational Implications of Burnout

The set of findings presented in this review reinforces the need to search for preventive measures to combat stress and burnout. Earlier organization studies provide sufficient reasons to combat burnout in an attempt to prevent low morale, reduced motivation, increased absenteeism, and reduced performance effectiveness. The new data suggest that effective measures to prevent burnout may also prove to be protective to health and beneficial to physical well-being, and may result in reduced disability, lowered healthcare costs, prevention of early retirement, and perhaps even the prevention of premature death.

Adverse organizational conditions have been shown to be more significant in the etiology of burnout than personality factors (Schaufeli & Enzmann, 1998). The lesson to burnout researchers is that it is plausible that individual traits predisposing employees to burnout interact with organizational features that are conductive to the development of burnout. As an example, when a major economic slump moves management to require that all employees increase their input of available personal energy and time to ensure the organization's survival, those employees who possess high self-esteem are less likely to experience burnout as a result (Cordes & Dougherty, 1993).

Senior management has a role to play in instituting preventive measures, including steps to ameliorate chronic work-related stress, particularly overload, training programs designed to promote effective stress management techniques, and on-site recreational facilities. Organizational interventions to reduce burnout have great potential, but are difficult to implement, by virtue of the complexities involved, and costly, in terms of resources required. The changing nature of employment relationships, including the transient and dynamic nature of the employee–employer psychological contract (Sparrow & Cooper, 2003), entails putting more emphasis on individual-oriented approaches to combat burnout. The role of individual coping resources, including self-efficacy, hardiness, and social support from friends and family, may become more important in future interventions.

It has been argued that workplace-based interventions, aimed at reducing stress and modifying some of the maladaptive responses to stress, often have little or no effect (Briner & Reynolds, 1999). Is this also true of interventions designed to ameliorate burnout? Most of the burnout interventions reported in the literature are individual-oriented and provide treatment, not prevention, much like other stress interventions (Nelson, Quick, & Simmons, 2001). There have been hardly any reports on interventions based on a systematic audit of the structural sources of workplace burnout with the objectives of alleviating or eliminating the stresses leading to burnout.

Longitudinal Studies of the Process of Burnout

The proposition that the early stages of burnout are more likely to be accompanied by heightened anxiety while the more advanced stages of burnout may be linked to depressive symptomatology needs to be tested in longitudinal research. Yet another example where longitudinal research might be beneficial is in connection with the above proposition that high levels of burnout may predict the incidence of CFS.

Situational and Self-concept Moderators of the Effects of Burnout on Health

One important area of future research concerns the possibility that there are situational and self-concept variables that moderate the effects of burnout on health. One of the predictions of COR theory is that individuals who lack strong resources are more likely to experience cycles of resource losses. Unabated, such cycles are likely to result in the chronic depletion of energy (i.e., progressive burnout). Cherniss (1995) argued that the advance of burnout is contingent upon individuals' levels of self-efficacy, and there is some support for this contention (Brouwers & Tomic, 2000). Lower levels of burnout are to be expected in work situations that allow employees to experience success and thus feel efficacious; namely, under job and organizational conditions that provide opportunities to experience challenge, control, feedback of results, and support from supervisors and co-workers (cf. Brouwers & Tomic, 2000; Schaufeli & Buunk, 1996). Thus, Chang and his colleagues (Chang, Rand, & Strunk, 2000) found, in a study of working college students, that optimism was a potent negative predictor of the emotional exhaustion scale of the MBI even after the effects of stress were controlled. Chang et al. (2000) concluded that concrete affirmation of job accomplishments, such as by merit awards, and increasing employees' optimistic expectancies may lower their risk of job burnout. The possibility that these job features and work characteristics may exert a moderating effect on the burnout–health relationship needs to be explored in future research.

Several interventions that have focused on burnout attest to the importance of the core self-evaluations of self-efficacy and mastery in understanding the effects of burnout on health. For example, a longitudinal research of burnout among teachers by Brouwers and Tomic (2000) found that emotional exhaustion had a negative effect on self-efficacy beliefs and that this effect occurred simultaneously rather than over time. They reasoned that interventions that incorporate enactive mastery experiences, the most important source of self-efficacy beliefs, were likely to have an ameliorative effect on teachers' emotional exhaustion. In a separate study, a multifaceted intervention that combined peer social support and the bolstering of professional self-efficacy was found to reduce burnout (measured by the SMBM) relative to a control group of nonparticipants (Rabin et al., 2000). Yet another example is the Freedy and Hobfoll (1994) study, in which the researchers enhanced nurses' coping skills by teaching them how to use their social support networks and individual mastery resources, leading to a significant reduction in emotional exhaustion in the experimental group relative to the untreated control group.

The role of personality factors in the etiological processes leading from burnout to physical health is complex and multifaceted (Kahill, 1988). In a recent meta-analysis, Thoresen, Kaplan, Barsky et al. (2003) found, for 23

studies covering 6,462 participants, a corrected mean correlation of 0.54 between negative affectivity and the MBI's emotional exhaustion scale. Garden (1989, 1991) concluded that certain personality types self-select into specific occupations and that they interact with stressful occupational environments that are conducive to the experience of burnout and ill health. Other possible paths of influence of personality characteristics on burnout relationships with ill health may exist. Several studies have reported a positive association between Type A Behavior Pattern and emotional exhaustion (Schaufeli & Enzmann, 1998). It appears that the complex interactions between personality traits and burnout have yet to be described and understood. It follows that future research should look for personality traits as potential moderators of burnout–health relationships.

FINAL REFLECTIONS

Given the data provided on the prevalence of burnout in advanced market economies, improving our understanding of the complex relationships between burnout and health is critical for informing prevention, intervention, and public policy efforts. Advances in our knowledge are unlikely to result from research lacking strong theoretical underpinnings and relying upon instruments whose construct validity is in doubt. For this reason, in this review we have selectively focused on theoretical and methodological issues in burnout research.

Burnout is likely to represent a pressing social problem in the years to come. Competitive pressures in manufacturing industries that originate in the global market, the continuing process of consumer empowerment in service industries, the changing nature of the employment contract, and the rise and decline of the high-tech industry are among the factors likely to affect employees' levels of burnout in different economic sectors. In addition, employees in many advanced market economies experience heightened job insecurity, demands for excessive work hours, the need for continuous retraining in the wake of the accelerating pace of change in informational technologies, and the blurring of the line separating work and home life. In many European countries, employers are enjoined by governmental regulations on occupational health to implement preventive interventions that concern job stress and burnout. For these reasons, we submit that continuous research efforts aimed at improving our understanding of the pathways leading from burnout to health are of crucial importance.

The evidence presented in this review concerning the negative implication of burnout to physical health, taken together with documented risk to mental health, strongly points to the need to assess and treat burnout in order to prevent or reduce possible damage to health. The need for such an intervention is further emphasized by the chronicity and significant prevalence of

burnout in advanced market economies, as documented in this review. One starting point for the assessment is the occupational health clinics where assessment of burnout can be introduced as part of the overall risk assessment for the employed population.

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